Service Engineers in Change: Count your words.
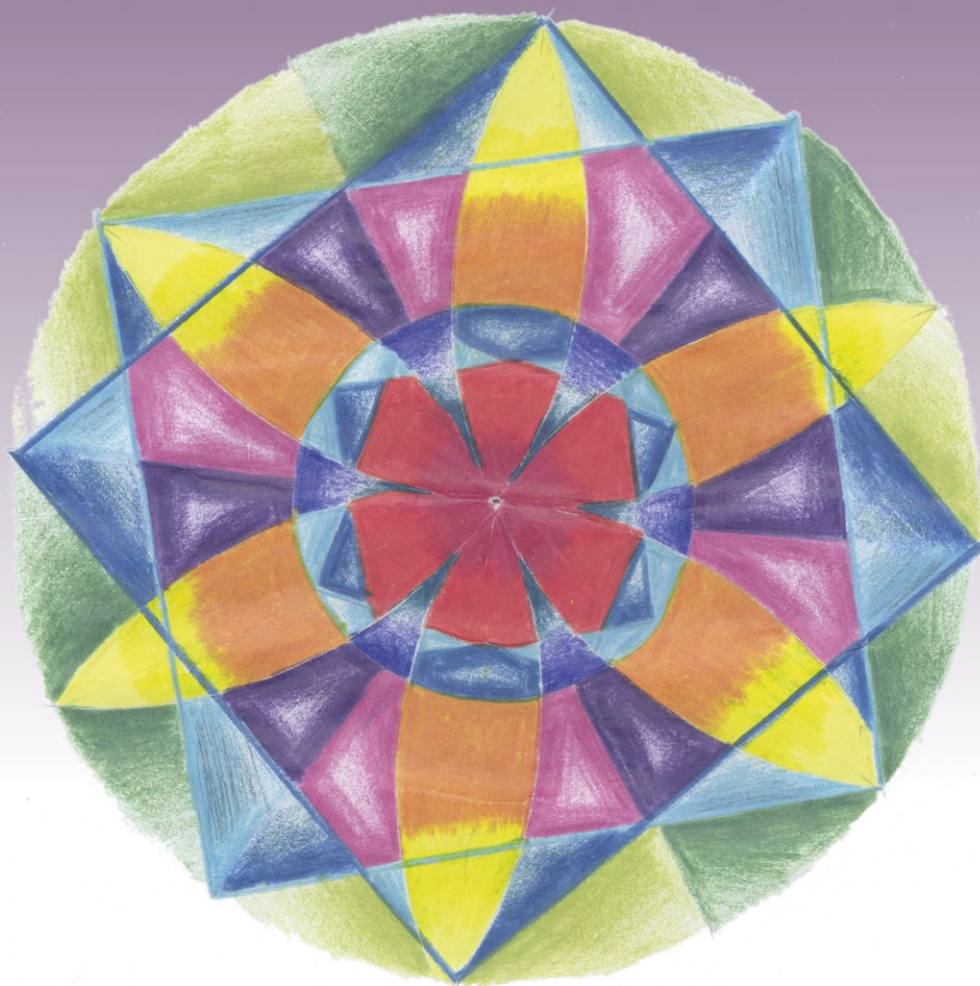
A case study into professional discourse and culture within three Dutch organizations

Jos Pieterse

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A case study into professional discourse and culture within three Dutch organizations

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Preface and acknowledgements

This doctoral dissertation describes three case studies of service engineers participating in organizational change, interacting with managers, and consultants. The study investigates how different professional cultures and discourses might affect the change process in the organization. These discourses and cultures of different professionals might hamper organizational change processes. The mainly Dutch change management literature describes an enormous failure rate (70%) of change (Boonstra, 2000; Vermaak, 2002) and according to the international literature on change management nearly two-thirds of all change efforts fail (Beer and Nohria, 2000). Change management still seems to be very hard for professionals in their organizations to realize successfully. Based upon practical experiences and personal insights from a practitioner working as an engineer, manager and consultant in an 'engineering environment' for more than 25 years, we assume that different professionals use different professional discourses. Perhaps the different discourses and cultures of interacting professionals are in some way related to the high percentage of unsuccessful change programs instead of the many other reasons that are given in the literature. Therefore this study's research question is:

What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?

The aim of this study is to shed light on professional discourse differences and how that might affect the course of events and results in organizational change trajectories. We bring together two scientific fields, first change management and second, linguistics. The intersection between those two fields represents the overlapping field of professional discourse and culture which has not been studied very much. Change management processes are seldom studied from a linguistic perspective and linguists have seldom studied change management processes including social interaction between different professional groups and their discourses. We assume that it would be very useful, both scientifically and practically, to take a closer look at the reasons why change projects are considered a success or a failure using the theoretical perspective of non-congruence between professional discourses, and thus this study investigates the interaction between different professionals in change processes. Analyzing the professional discourse in interaction during change processes not only focusses on professional discourse but also anticipates possible differences in professional cultures within an organizational context.

The title 'Engineers in change' clearly sets the focus on engineers participating in organizational change. Engineering is a profession with a long history and high normative standards, codes, specifications, and ethics. This history together with the rules and regulations may have developed a typical engineering culture that is firmly based in the engineers' education and later career. In studies (see for instance Leonardi, 2001; Kunda, 2006; Sales, 2006; Leclercq-Vandelannoitte, 2011) these engineers are characterized by others (i.e., non-engineers) as difficult to work with, rather pigheaded, practically focused and problem solvers. This study puts the service engineer in the spotlight while interacting with managers and consultants in change processes. The difference between an engineer and a service engineer is in the fact that the service engineer is often working alone in various field locations for customers, also having direct contact with the customer and getting immediate feedback on his services. From a managerial point of view the service engineers

are harder to lead and control, because they are not working in an office environment as most managers do. Being an engineer myself in the first years of my career makes this professional group interesting to study. Moreover, the literature on professional culture in relation with change management is limited. All these ingredients together made it worth working on this project for so many years. Last but not least we use 'he' in the text, but of course you are free to read 'she' on that occasion.

During the years working on my dissertation many people helped me, were interested or kept asking how far I was in the process. For quite a time I answered that I assumed (and hoped) it was somewhere in the middle; a lot of work was done, but there was also a lot of work to do. The Roundabout meetings twice a year were the place where I met other PhD candidates of Jan Ulijn and where we discussed our PhD projects together. These inspiring meetings encouraged me to go on and I like to thank Arjen Verhoeff, Gert van Brussel, Jean-Marie Fèvre, Wiel Hotterbeekx, Paulus Vossen, Frank van Helmond, Lambert van Horen, Ron Byron, Ilmar Woldering, Anton ten Westenend and the visiting professors who were interested in listening to and commenting on all our work.

Although it is not done to acknowledge your promoters, I would make an exception on this unwritten rule as just an example of the scientific culture. This PhD project would never have been started and finished without the help of Jan Ulijn, Thijs Homan, and Marjolein Caniels. Thijs, you gave me the opportunity to start this PhD when we met at Pentascope. At that time you were one of the inspirers for the authors on *Schitterend Organiseren*, although we sometimes felt that as transpiration. You introduced me to Jan Ulijn, who happened to live just 'across the bridge' in Nuenen. With the international experience of Jan, the critical theoretical precision of Thijs and the accurate writing skills of Marjolein I had a dream team to work with. Always critical, and at the same time giving confidence to go on with this PhD project.

Together with Jan Ulijn I made my first trip to the scientific world in Stanford (IWIC, 2010) followed by two other visits (IEMS, 2010 and IPCC, 2012) across the ocean. Especially the IPCC 2012 conference in Orlando is hard to forget, being invited to Judy Strother's house, having a wonderful dinner at the beach while at the same time knowing that my eldest sister, Elma, had just passed away. Thanks to the company of Judy, Ilmar, Jan, Anne Caborn, Michelle Egan and Zohra Fazal I was able to survive that emotional rollercoaster. The people I met on these international conferences gave me the feeling of being an accepted insider and it was interesting to see and hear the professional discourse and culture of scientists.

After all this PhD project was a challenging journey were the steps on the road towards the end were not always planned, but looking back it seems that all the steps were needed to reach the goal. On that journey there were always people willing to help, giving suggestions or sometimes even taking time to think with me about the next steps that could be made. In other words and to quote Kierkegaard; "It is quite true what philosophy says; that life must be understood backwards. But then one forgets the other principle; that it must be lived forwards" (Kierkegaard, *Journals IV A 164*, 1843).

Nuenen, March 2014.

Table of contents

List of abbreviations and acronyms

AE&I	Account, Engineering and Infra
AM	Aircraft Maintenance
BSD	Building Services Department
BU	Business Unit
DA	Discourse Analysis
Eng.	Engineering
FOS	Field Office Service
HQ	Head Quarters
HTS	Higher Technical School
ICT	Information and Communication Technology
IS	Infrastructure Services
MISTRAL	Project name of the change project in Case 2
M&R	Maintenance and Repair
MRO	Maintenance, Repair and Overhaul
MT	Management Team
MTS	Middle Technical School
NC	National Culture
OC	Organizational Culture
OD	Organizational Development
PC	Professional Culture
PD	Professional Discourse
P&L	Purchasing & Logistics
PDI	Power Distance Index
PID	Project Initiation Document
RNAF	Royal Netherlands Air Force
SI	Social Innovation
TD	Technical Department
TI	Technical Innovation
TRAX	Product name of aircraft maintenance software
UAI	Uncertainty Avoidance Index
UAT	User Acceptance Test
UFO	Unified Field Office
WOM	Work Order Management

List of Figures

List of Tables

List of Appendices

Chapter 1
Service Engineers in Change; observations in three cases

This study is about service engineers participating in organizational change and the way they interact with managers and consultants. These groups were selected because managers and consultants are frequently involved in change processes and also often initiate them. The service engineer was selected because this professional group is frequently participating in change processes due to technological and social innovations. Furthermore, this group of professionals have direct customer contact (often more compared to sales and account managers) and are difficult to 'manage' because they operate out of sight of their supervisors in the field. It is known that different professionals use different professional discourses (i.e., register or style) that might hamper smooth organizational change processes (Ulijn and Strother, 1995; Gunnarson, 2009). Why is this a problem? Many organizational change programs do not achieve their objectives or goals. The literature regarding change management indicates roughly one third of the change projects to be successful and two thirds a failure (Beer and Nohria, 2000; Boonstra, 2000: Vermaak, 2000). Cummings and Worley (2009) reason for successful change while Beer and Nohria (2000) mention reasons for failure (i.e., goals, strategy, culture, leadership, technology).

However, it appears to be difficult to successful achieve change. Today global conflicting developments require organizations to adapt constantly and employees have to adhere to changes related to their work procedures, routines, adapt to new technologies or need to learn different other competencies. When organizations and employees cannot keep up with such changes they are no longer on the competitive edge. Investment of time, money and effort remain without effective results. The conclusion is that managers, employees and other stakeholders need to understand organizational change dynamics in order to stay successful and competitive.

This study investigates organizational change from an interactional perspective. It focuses on three professional groups cooperating in change for whom professional culture, discourse, negotiation strategy, communicative support and conversations are crucial. The here chosen discursive angle might give new insights in the organization dynamics and change processes. To that purpose, three different cases regarding organizational change were studied in which the role of interacting professional discourses and the participants' cultures were explored in order to study how this affects the change results. In these three different change processes, innovation was an important driver for change to maintain a competitive edge (Tidd and Bessant, 2009; Verhoeff, 2011). Organizational innovation can be divided into two types. The first is Technical Innovation (TI); e.g., machines, administrative systems, products, processes, materials with the aim to create added value for products and services, and a second type is Social Innovation (SI); e.g., better and more enjoyable job performance, cooperation, work-life balance, and new networks (see Verhoeff, 2010; Pot, 2009). The TI is about the work content while SI is considered to be related to the work context.

Change processes usually affect the work content, such as changing ICT tools and work processes, but they can also start by changing the work context, for example changing behavior and competencies

(Verhoeff, 2010). Organizational change often starts with a TI and is then followed by SI. Sometimes organizational change starts the other way around, but in general both technical and social innovation must first combine in order to achieve true organizational innovation (Verhoeff, 2010).

In interaction processes language is prominent because everyone needs to communicate. Participants do not question themselves what the effect might be of their own professional way of expressing. Such interactions are known as professional discourses. (O'Grady et al., 2011; Gunnarsson, 2009; Plum et. al., 2008;). Gunnarsson (2009: 5) defines professional discourse as "text and talk, and the intertwining of these modalities, in professional contexts and for professional purposes." This implies that professional discourse includes both spoken and written language "produced by professionals and intended for other professionals with the same or different expertise" (Gunnarsson, 2009). For this study the main question was *what* is "the language produced by" professionals such as service engineers, managers and consultants, and *how* does this language affect the interaction of mentioned professionals involved in change programs?

This study was not meant to investigate only the differences between professional discourses and how this influences change, but it also hoped to develop facilitative actions that will positively support conversations between the different professionals. The practical objective of the study is to understand how differences in discourse affect the change process. The findings of this study lead to a better understanding of cross professional conversations, where implicit assumptions become explicit and can serve as accelerators for change.

An important assumption for this study is that differences in professional discourse affect change processes in organizations. However, a strict causality between discourse differences and the change result is not assumed. Field observations showed that the participants in a change process encountered problems during discussions and difficulties in understanding each other, even though they worked for the same organization. In fact, it was observed that controllers, engineers and, for instance marketers, had completely different understandings of the objectives for the change, and how they could be achieved. Both managers and consultants were often not able to facilitate the interaction processes in which these implicit discourse differences were not made explicit. In organizations (change) managers often responded by saying that, in their perception, engineers are difficult to cooperate with in change processes and that they tend to fall back into their old habits and routines after the completion of the change project. The service engineers, on the contrary, state that they are doing their best and want to service the customer.

Three cases
In the three cases studied, both TI and SI were 'initiators' for the change processes. Cases 1 and 2 are about implementing new ICT technology, which requires other competencies than the traditional ones. The objective of Case 3 was to 'train' engineers in customer oriented behavior. The change program in the first case focused on implementing an innovative Tablet PC for service engineers to give them a central role in the service process regarding customers. This change program can be seen primarily as TI, which particularly changed the work content and then it was followed by SI.

The second case started working with a new Maintenance, Repair and Overhaul (MRO) system for aircraft maintenance and is an technical innovation. In this case an existing MRO system was already in

use, but the implementation of the newer system change the work content of the aircraft engineers because of other built in procedures, look and feel, and process flows required by the software.

The implementation of a new strategic vision was the goal of the third case. This was concerned with influencing behavior of service engineers in order to increase the influence of the customer on aspects of their rental homes. Now the change of behavior required a shift in the work context of the service engineers, thus making social innovation the most important catalyst; Technical innovation was not the objective in Case 3. The three cases have been studied in parallel, using the same methodology (see Chapters 5, 6 and 7). In Chapter 8 a cross case analysis is made, relating the professional discourses and cultures to TI and/or SI.

The organization (i.e., structure and setting), and change contexts (i.e., the change approach) differed in every case. Furthermore, the drivers for change (i.e., TI and SI) were also different. The interaction processes between service engineers, managers and consultants are what the cases have in common. Such differences in organization and change contexts must be taken into account because they influence the interaction between participants. This includes their formal and informal conversations and processes of sensemaking. The three cases evolved in real-life practical organizations instead of experimental/laboratory settings. This showed that it was possible to investigate the interaction as it happened.

Figure 1.1 shows the process model of this study, and deals with how the events that result in the outcome take place within every case. The contextual factors (i.e., organization, change, and intentional context) influence the interaction of the three professional groups, and resonates with their professional discourse and culture[1]. The interactions affect the change result. The double-ended lines in Figure 1.1 represents the dynamic and fluid relations occurring in different time, space, and contextual situations.
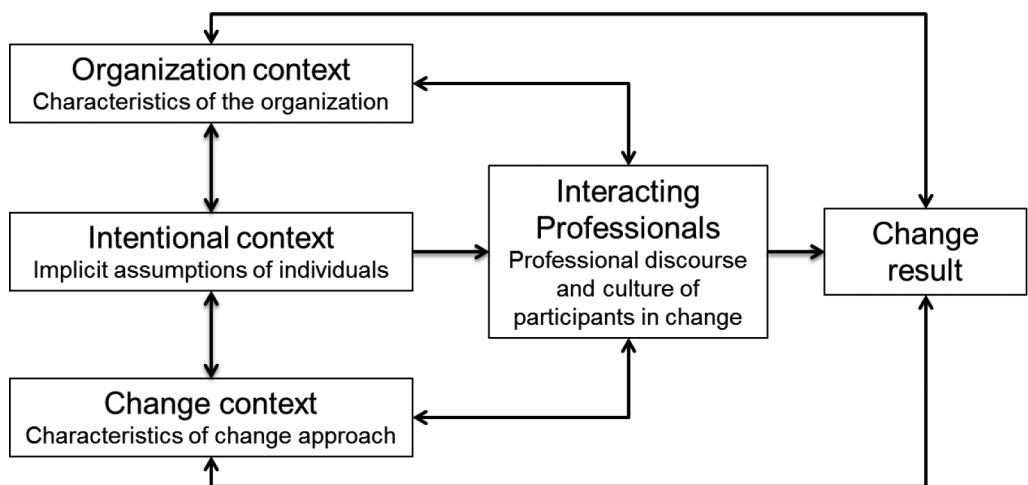
Figure 1.1 Process model of this study

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1   We see professional discourse and culture as two sides of the same coin, although they can be seen as seperate entities. Combined we can consider this as the habitus of the professional (Bourdieu), however for reasons of clearity we prefer to mention discourse and culture as two intertwined concepts.

Given the focus of this study we draw on the literature from change management and linguistics. By using both qualitative and quantitative methods, including intensive participant observations, we gained insights into the dynamics of interacting professionals in change situations. Studying real-life case organizations as a participant observer had consequences for the rigor of the research (see Chapter 4). Nevertheless, this research design was selected to create a lively picture of social interactions, sensemaking and how discourse differences affect the change processes. These factors were in the end related to the success or failure of the change project.

The next part of this chapter consists of the following sections. Section 1.1 describes the aim of this research and the research questions. The next Section reflects on the theoretical background and introduces basic research insights on organization change management and linguistics. There after the problem statement and reasons for studying service engineers interacting with other participants is described. It is argued that an overlap exists in the academic research fields of change management and pragmatic linguistics. Here professional discourse and culture are discussed. Research on this area of overlap is scarce, and it is regarded as a gap in the current literature which is worth to investigating. Section 1.4 describes the research design and methodology. In Section 1.5, the three cases studied are presented. Finally, Section 1.6 provides a brief summary of this chapter. The structure of the whole dissertation is shown in Figure 1.2.
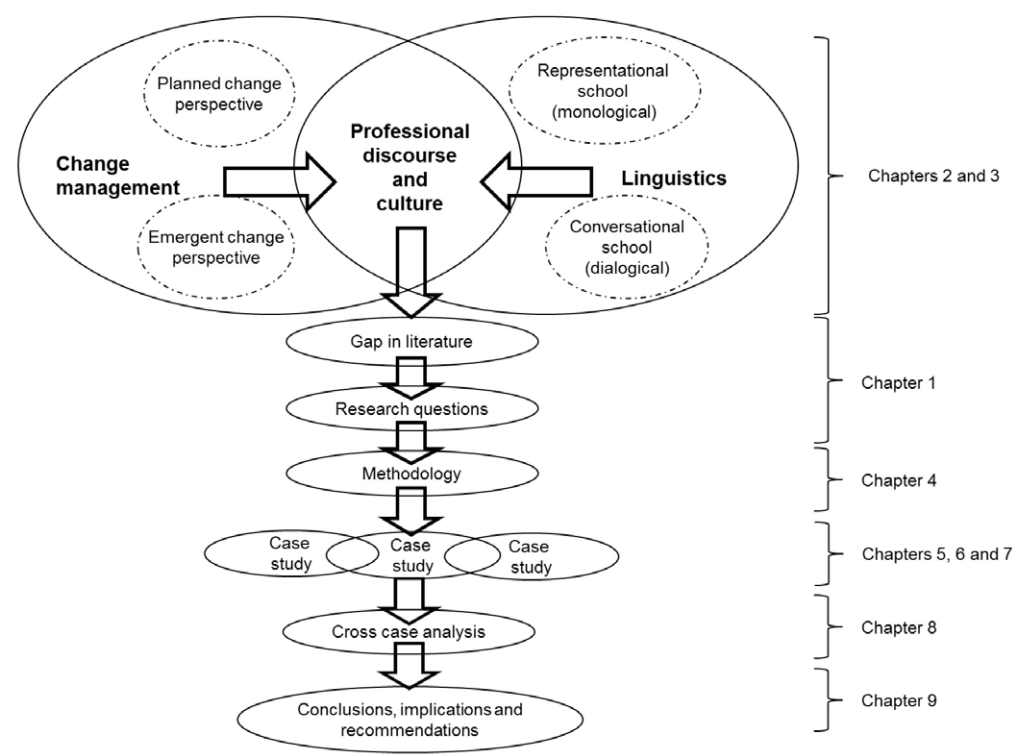
Figure 1.2 Global structure of this study

Figure 1.2 may be read as follows. Chapter 1 introduces the playing field of the study by addressing the scientific fields of change management and linguistics, describing the gap in the literature, which was also experienced in the field observations. Chapters 2 and 3 describe the relevant literature on change management and linguistics including professional discourse. The methodology is described in Chapter 4 followed by the three case studies (Chapters 5, 6 and 7). In order to make generalizations, to the extent possible, a cross-case analysis was performed (Chapter 8) and conclusions and recommendations for future research are described in Chapter 9. We dealt with all research questions in each case chapter (5, 6 and 7), and in the cross case analysis of Chapter 8.

1.1 Research aim and research questions

This study focuses on change programs or projects involving participants with different professional backgrounds who have to cooperate in cross-functional teams. The cooperation and work in (virtual) cross-functional teams is apparently on the rise in organizations, and across organizations. In a globalizing business environment virtual teams are becoming more and more important. "Teams are the center of how work gets done in modern society" (Kozlowski and Ilgen, 2006: 78). Typically, these teams have to communicate and intervene in the existing organization and need to direct employees whose professional backgrounds are different from their own.

Nevertheless, working in the same organization does not necessarily mean that people share the same (professional) background. Perhaps, especially in change programs these people are working together to realize the change and this is where different professionals meet and the clash of (professional) cultures begins (van den Steen, 2009). Different opinions regarding how the change approach should be set up, differences in understanding each other and difficulties when working in different departments or even geographically dispersed (i.e., virtual) affects the outcomes of the change process.

Brockman et. al., (2010) observed that different department members often have typical professional languages derived from their own professional education and career experiences. These differences must be overcome by the participants in the change process in order to be able to interact and learn from each other (Baunsgaard and Clegg, 2013). In this study, change programs were investigated in which service engineers are involved. In some occasions they can be seen as the receivers (change objects), and sometimes as senders (change agents) of the changes to be realized. Managers and (internal/external) consultants are involved as well, but they mostly are in the role of senders (change agents) in the change programs. The interactions between these participants in the change, working together in the same organization, are the topic of this study. Thus the main research question is as follows:

What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?

Several subquestions were formulated to answer the main research question. These are sensitizing questions that help to search for relevant phenomena in the case situations. The following subquestions were derived from the organization setting of the three cases and the literature:

1. What is the organization and change context of the three cases?
2. What is the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants?
3. Can a difference between Professional Culture (PC) and Professional Discourse (PD) of different professional groups be a cause of resistance to change?
4. Do cultural context factors, such as the interaction between Organization Culture (OC) and Professional Culture (PC) affect organization change?
5. Can Discourse Analysis (DA) be useful to understand the organizational change result?
6. Can DA lead to additional insights concerning the interaction between OC and PC as to benefit Technical and Social Innovation (TI and SI)?

The subquestions relate to the contextual factors, and to the professional group of service engineers. They also refer to the interaction between professional groups with different backgrounds, such as managers and consultants. Because this study wants to understand the role of differences in professional discourse and culture interaction a central model is adapted from Ulijn and Weggeman (2001) and is described later in Chapter 2. All subquestions will be discussed in Chapters 5, 6 and 7 referring to the three cases. The cross case analysis (Chapter 8) presents the communalities and differences of the three cases addressing the professional discourse and culture interaction. Finally practical and theoretical suggestions are given for the professionals involved in the cases in order to create an awareness of the effect of different discourse styles on the change result.

In conclusion, this study is about service engineers in change. However, change programs always involve various stakeholders, such as managers and consultants who have to interact and communicate with one another. Each individual service engineer, manager and consultant has a stake as a stakeholder in the change process. Each individual has a unique personality with individual values, beliefs and perceptions. However, the change context required interactions, which starts by sharing discursive actions. Herewith the professional discourses of the stakeholders mix up with these different individual perceptions. This discursive perspective, adopted in this study, implies that individuals experience subjectivity by means of the interaction with others. This study uses a discourse approach that is not derived from the psychological state of an individual involved in the change process, but focuses on the interaction between stakeholders from a communicative and sensemaking perspective.

1.2 Theoretical background

What is characteristic of many change programs within organizations is that the various professionals have to work and communicate together in (project) teams in order to fulfill different change roles (Cohen and Bailey, 1997; Balogun and Hope Hailey, 2008). Although they might be working for the same organization and speak the same mother tongue, there is always a difference in their personal and professional backgrounds. Therefore, the change programs can be considered as problematic occasions because in the interaction between professionals the differences in their discourse comes to the surface. While in change management literature many reasons can be found why change projects fail or succeed, this might be another reason why change processes can be problematic as well. The role of different professional discourses in this interaction is underexposed in the relevant change management literature.

This study takes on two different theoretical perspectives within change management literature as a starting point, and combines that with two theoretical schools within linguistics. Figure 1.2 shows the planned and emergent change perspectives within change management and the representational and conversational schools within linguistics. The literature described in Chapters 2 and 3 gives a more elaborate overview of these perspectives and schools. The important role and function of discourse during communicative interaction and sensemaking (e.g., monological and dialogical) are also discussed in Chapter 3.

On the basis of the change management literature explanations for the failure/success of change need to be postulated in goals and strategy, culture and leadership, technology and systems, (political) behavior, resistance to change, individual skills, and finally in the change management process itself (Pfeffer, 1992). It is evident that change processes in organizations do not generate sustainable effects that are accepted and appreciated by both managers and employees. Until now, change management studies have provided many conclusive answers which might explain the reasons for failure and suggested possible solutions. However, those publications does not seem to improve the effectiveness of change programs in practice. "To many, this must seem paradoxical. On the one hand, there is more scientific and business literature on how to manage change than ever before. On the other hand, the failure rate of change initiatives is astronomical" (Burnes, 2009: 3).

Within this study three cases are investigated using the theoretical lens of the emergent change perspective and the conversational school (see Chapters 5, 6 and 7). However, the practical execution or change context within the cases can be different from this theoretical perspective. The change contexts are a given fact and show the way the case organizations are managing their respective change programs. In the three cases a gradual shift from strictly planned with some learning (Case 1) towards a loosely planned with interactive learning (Case 3) change context can be observed (see also Boonstra, 2004). Interactive learning is necessary when issues in the organization are ambiguous and strategic directions have to be realized. This requires participants "to interact with one another, reconstruct the organizational principles, create new contexts, envision the future, and create a collective desire for change and learning" (Boonstra, 2004: 11) in which sensemaking and contextualizing are important. In the three cases studied the change initiatives were initially taken on the management level and despite the change approach employees made sense about, and were contextualizing the required change in their own situation.

In organization practice it is quite common to use a planned (or incremental) change approach (Burnes, 2009). It can be questioned why organizations or (change) managers try to change their organizations in this planned manner. Stacey (2010) reflects on the way

> *"most professional management and leadership development programs in organizations, management consultancies and people in organizations, including executives, all talk about how organizations should be governed, all making the same taken-for-granted assumptions. There is a dominant discourse in which it is assumed, without much questioning, that small groups of powerful executives are able to choose the 'direction' their organization will move in, realize a 'vision' for it, create the conditions in which its members will be innovative and entrepreneurial, and select the 'structures' and 'conditions' which will enable them to be in control and so ensure success" (Stacey, 2010:1).*

Stacey (2010) points out a dominant management and consultancy discourse that was relevant for this study.

The theoretical emergent change perspective disclaims a linear cause-and-effect, top down, command-and-control styles of management, which are part of the planned change perspective. Nevertheless, the planned change perspective has long been regarded as the best way of managing change, and many organizations still use this approach. However, in a world of rapid and unpredictable change, this approach is being criticized. The emergent change perspective can be seen as the opposite end of the change-continuum and has also been criticized for its strong attention to the political and power dimension of change and the perception that organizations have to operate in a constantly changing environment (see Burnes, 2009).

This study acknowledges both the planned and emergent change perspectives and does not consider one theoretical perspective as superior over another perspective. Nevertheless, when comparing both perspectives we prefer the emergent change perspective. It is considered to be more relevant for studying communication, professional discourse and social interaction. Therefore this study takes a discursive angle to investigate both the strictly planned (in Case 1 and 2) and the more interactional learning (in Case 3) change process using discourse analysis to reveal the interaction processes and sensemaking among participants. In the next section, communication in change will be discussed by taking a closer look at the representational and conversational schools (see also Chapters 2 and 3).

The role of communication in a change process
To implement a change managers and employees need to communicate. In the planned change perspective this communication will have a top-down, monological character in which the sender-receiver model is used whereas the emergent change perspective views organizational change as "an ongoing improvisation enacted by organizational actors trying to make sense of and act coherently in the world" (Orlikowski, 1996: 65 in Burnes, 2009: 363). This second dialogical perspective represents different aspects of communication, behavior and language use in interaction. These two different theoretical perspectives on communicating in change processes fit within the representational, sender – receiver model of Shannon and Weaver (1949), and the conversational school based on the work of Ulijn and Strother (1995). (see Chapter 3 for details).

Within the representational school it is assumed that the language used represents clear and fixed content for all those involved. That is why, for instance by using the word *methodology*, being the signifier, it is assumed that this directly makes clear for all involved what the meaning, the signified is. Within the emergent change perspective communication can be seen as conversational, which means that there is no clear relationship between the signifier and signified. In the local interaction between individuals certain signifiers become signified according to the local situation and the participants who interact. This implies that the conversational school considers social interactions "as a process of communicative action which has the intrinsic capacity to pattern itself" (Shaw, 2007: 11). However, this school does not pay attention to the specific professional discourses of those participating in the communicative action. This will further be discussed in Chapter 3.

The effect of professional discourses seems to be very relevant, considering the research that has been conducted about change participants and how they perceive or experience change. "When

participants view change, it is filtered through their preferences and appreciated and accepted, or resisted accordingly" (Dibella, 2007:233). Dibella (2007) argues that the change agent must communicate change in a specific way, depending on the likelihood and appeal or attractiveness. This implies that social interaction between participants and their professional discourse becomes important. However, the role of professional discourses in change management processes so far has not been studied and neither have the sensemaking processes. This study is based on the premises that differences in professional discourse and culture affect the interaction processes of those involved in a change. This might influence the change progress and a successful outcome.

In the communicative framework of Shannon and Waever (1949) the understanding of each other is assumed to be critical for a successful change outcome. In conversations language is an essential part of individual and collective sensemaking processes, and the use of language is an 'expression' of how one thinks about our (professional) work[2]. This is known as the "representational-referentional" model. The observer thinks about the change process from the outside and is "unrelated" to the process. This study, however is based on the "relationally-responsive" model in which the participants seek to understand the change process from within (Shotter, 2006: 590). Within functional/departmental groups we see that communication and especially its interpretation is bound to certain groups or professions. If one is not a permanent member of that group the person can hear what is said, but may find it difficult to fully understand the meaning of what is said. That too can be said of a (written) text, which refers to the representational model. In fact, there are different professional discourses related to the different functional groups. This is known as the horizontal communication between different professional discourses such as within marketing, production, and controlling (see for detailed studies Ulijn and Weggeman, 2001 and Witman, 2008). To the extent this study evoks at oral discourse, and we adopt the 'inside' or relational-responsive model. Once we analyse written discourse the representational-referentional model is adopted.

Shaw (2007: 96) mentions that "the more professionalized an activity becomes, the more codified" the language between members will be. This was for example observed in the medical professions (Witman, 2008). The discourse and culture of the profession is "a core of repetitively sustained, habitual ways of recounting and accounting which are kept alive between increasingly clearly identified members of the profession," resulting in "a systematic practice discourse of word and deed" (Shaw, 2007: 96). This professional discourse in word and deed is understood as an audible and visual form of professional culture. This study focusses on the interaction of professional discourse and professional culture. They are not seen as two separable concepts but are in fact intertwined as for example two sides of the same coin. Consequently, the change processes in the cases were analysed at the level of discourse.

Discourse analysis is part of the scientific field of pragmatic linguistics. This study incorporates discourse analysis because it uncover the reasons for the limited success of change programs. The result of such an analysis might even enable the prediction of successful change.

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2   This "representationalist view" (Shotter, 1997) is not the primary point of focus in this study. It is assumed that the social interaction with others influences the thinking of the self as well. Conversations are then a mixture of the self and the other thus implying a conversational model of communication (see Chapter 2).

To conclude, the study takes a closer look at why change projects are a success or failure by using the theoretical notion of non-congruence between professional discourses. This leads to the examination of the interaction between different professionals in change processes. Analysing the professional discourse during interaction as part of change processes anticipates on possible differences in Professional Cultures (PC). Until now the scientific literature discusses National Cultures (NC) and Organization Cultures (OC), but neglects PC.

Professional culture is here considered as a unique set of behaviours, including the discourse, beliefs and behaviors. These are acquired when a person is raised in a social group or joins a particular professional group (Hofstede, 2001). This implies that discourse and professional culture are intertwined. Members share language that links together individuals, and relates to a professional culture.

This study explicitly takes different professional discourses and cultures into account because usually various professional cultures are involved in change process. The focus is on the interaction processes of different professionals by using discourse analysis taking both conversations between the members of change project teams and organization members who are not a part of the change project team into account. Together, these interactions take place within an organizational and change context.

1.3 Problem statement

According to Hatch (2006: 6), the four major sources of inspiration for organizational theory are "prehistory" (1900 – 1950s), "modern" (1960 – 1970s), "symbolic interpretive" (1980s), and "postmodern" (1990s). She links these four sources to the academic disciplines that have contributed to organizational theory, and considers them as consecutive. "Contributing disciplines range from the natural and social sciences to the humanities and arts" (Hatch, 2006:7). The engineering discipline has a long history and "with their education and professional experience they have the ability to think conceptually and in terms of systems, believe in the law of physics, and have respect for technology, computations, materials and designs" (Menzel, 2008: 39). The scientific field of Engineering was regarded by Hatch as mainly contributing in the "prehistory-phase." Linguistics plays a role in the "symbolic interpretative" (1980s) developmental phase according to Hatch (2006).

This indicates that both engineering and linguistics had an influence on the theory of organizations during different times by different influential thinkers. Nowadays technical expertise and engineering skills are still considered to be more relevant than linguistic skills during the education and on-the-job training of engineers (Ulijn and Strother, 1995). However, "engineers recognize that they themselves must learn, besides their technical knowledge, more about customers and their needs as well as the general business environment" (Menzel, 2008: 40). This study acknowledges the need or the social and communication skills of engineers when cooperating with other professionals. Why is this important to study? In the next section the theoretical relevance is discussed, thereafter the practical relevance.

Theoretical relevance

As described in the beginning of this chapter organizational change works out differently, has high failure rates, and many reasons for success/failure. Despite the enormous amount of scientific and professional research, it still seems difficult for professionals to change successfully. It could be that the scientific literature is too abstract and vague for managerial use in organizations. The advice such as; strong leadership, adequate communication, clear goals, visions and participation, might be too abstract. Hardly any research has been carried out on the effect of different professional discourses and cultures of professionals interacting during a change. In this context it is of interest that linguist research (professional) discourse, but hardly pay attention to how discourse styles affect the outcome of change projects. Therefore, this study proposes another path to investigate organizational change. Here change is considered as a sensemaking process in which communication, discussion, negotiation, and the use of professional discourse (both written and spoken) are inherent characteristics in every change. The interaction processes occurring between professionals, their professional discourse, culture, and their sensemaking processes are researched here. By taking a discursive angle on organizational change findings of linguistics on professional discourse can be incorporated. Furthermore, the theoretical relevance can be found in combining the linguistic perspectives within the change management practices.

Practical relevance

Field observations showed how different professionals were involved in project groups, interventions, and other forms of cross-professional cooperation to change an organization in a specific direction. Cooperation between such professionals was not simply 'business as usual' and successful interaction was not always the case. Although these professionals work for the same organization, different individual and profession-related perceptions often co-exist. Hence, professional discourse used when interacting can cause misunderstanding which in turn, leads to discussions and a slow-down of the change process. These field observations suggested that the typical professional discourse was firmly rooted in the professional background and related to the group to which the professional belongs.

The most common response by project teams to overcome this problem was to write a communication plan or to intensify the communication moments. However, in a rapid and constantly changing organizational environment the expectations concerning communication skills seemed often too high. Managers and employees need to work together on more and more change projects to keep their organization competitive. This implies that the role of professional discourse is becoming more important. It is not about the quantity of communication, but about its quality. From a managerial and practical stance, it is important to know whether for example engineers have a typical professional discourse that subsequently makes it more difficult to achieve successful change. Does a difference in professional discourse hinder cooperation and does it hide implicit assumptions? However, such question can be raised when one observes the professional discourse of a manager and a consultant, which are also seen as professions. Scientific research showed that such cooperation is needed in many change projects (Leonardi, 2001; Bechky, 2003; Leclercq-Vandelannoitte, 2011). This makes this study, which focuses on this specific group of professionals (e.g., the service engineers) quite relevant. Ideally, it is assumed that for a change process to succeed participants need to strive for shared meanings and sensemaking.

1.4 Methodology

Before choosing a research design and determining the methodology it is necessary to describe considerations that are relevant for and consistent with the contents of this study. We used change management and linguistic literature for insights, directions and initial concepts to explore how different professional discourse styles might affect interaction and sensemaking in change processes. The process model depicted in Figure 1.1 shows these dynamics and implies that the focus is on all these aspects together instead of reducing this complicated situation to a more limited number of 'variables' making a variance model possible.

Guba and Lincoln (2005) describe five different ways (i.e., paradigms) to do research and discusses them using various methodological issues that must be considered by the researcher in order to define a research design (e.g., the nature of knowledge, inquirer posture, and goodness of quality criteria). We draw from this framework to make methodological decisions and found the constructivist paradigm appropriate for this study. Furthermore, it is important to understand the position of the researcher and how he perceives the world, humanity, culture, knowledge development, and his norms and values. (see also Chapter 4 for details).

The main research question of this study was about 'how' interaction processes between different professionals develop and 'what' the role is of professional discourse in this interaction. In addition, it is important to know 'why' these different professional discourses might affect the change outcome. These kind of questions require an explorative research design.

The discourse framework to analyze the data was developed, hence this study can be characterized as an explorative approach in order to understand emerging new phenomena. The aim is to study the 'how and why' questions posed in Section 1.1. Corbin and Strauss (1990, 1998 and 2008) developed an approach in which already existing scientific studies are used to structure the inductive theory building process. For this study the Corbin and Strauss (2008) approach was choosen. This prescribes gathering empirical data from cases as well as further study the scientific literature during the research process. It was possible to use the literature, and at the same time to conduct the research. This research design incorporated the use of literature during the phase of data gathering and analysis to gain new insights. The approach is 'emergent' and alike work in progress.

Three case studies to collect empirical data
The characteristics of the research questions and the constructivist paradigm indicated that a case study design is appropriate. This approach requires close interaction/contact with the research object. Case study research is test used as an "technique for uncovering firm-idiosyncratic effects" (Rouse and Daellenbach, 1999: 490), to do actual "research in organizations" instead of doing "research on organizations, because it gives access to a broader set of data" (Rouse and Daellenbach, 2002: 964). Pettigrew already in 1973 argues that it allows researchers to investigate phenomena in their daily life context. While Benbasat, Goldstein and Mead (1987) point out that it does not attempt to control context nor does it refer to data independent of the context.

The case study research method also has its disadvantages. First, it raises serious concerns of validity and reliability. Second, there is often a lack of standardized methods which might lead

to many different incomparable findings. Nevertheless, for this study it was decided to conduct three different case studies over a period of nearly two years in which the same data sources were used. Formal project and organization documents, presentations, company newsletters, attending formal meetings and informal conversations were sources of data in the three case studies. Further, the same data gathering methods, such as word count on documents, semi-structured interviews, discourse analysis, and participant observations were used. Using similar data sources and analysing the data in a similar structured qualitative and quantitative manner was choosen to increase the validity and reliability of this study. On formal organization and project documents lexical word count methods were performed using *WordSmith* software in order to look for typical words that were often used for describing the change projects.

The semi-structured interviews were conducted with participants who represented all three professional groups relevant for this study. In the interviews the main focus was the organization context, change context, and to some extent the intentional context. At the start of a particular case study the semi-structured interviews were also for the researcher a way to become familiar with the organization. They also provided an opportunity to understand what the participants thought about the change project.

The main part in this study focused on professional discourse and used a Discourse Analysis (DA) framework to gain insight into the syntax of oral language usage by searching for five different speech acts (Searle, 1983), two different negotiation strategies, two ways of communicative support (Ulijn and Strother, 1995), and four conversation phases (Ford and Ford, 1995). See for details of this DA framework Chapter 4. These different DA methods offered the possibility to study language at the micro level by speech acts, the meso level by negotiation strategy and communicative support, and on the macro level of discourse by conversation phases (Grant and Marshak, 2011). By coding the data according to the developed DA framework, it was possible to gain insight into the specific professional discourse and culture of the service engineers, managers and consultants involved. The speech acts should give insight to the professional discourse while the negotiation strategy and communicative support showed the interaction processes among participants. The conversation phases might indicate the progress of the interaction and influence the degree of success of the change result. These standardized methods increased the generalizability of this study (see Chapter 4).

Finally, a coding for technical and social innovation (TI and SI) was added to find a possible relation between the type of change, the typical language use of the stakeholders and the success of the change project. This is described in Chapter 8 offering the cross-case analysis of all three cases.

1.5 The selection of the three cases studied for the dissertation

The cases have been selected according to criteria regarding 1) the ongoing change program, 2) the participants involved, 3) openness towards an action research method, and 4) partnership with the cooperating consultancy firm. The first case was based on a strictly planned change approach in which the monological communication of the representational school was used. The third case used a more interactional learning change approach using the dialogical communication approach of the conversational school. The second case is somewhere in between, working according to a planned change approach, but using the dialogical communication and active involvement of the service

engineers. All three cases are described in a comparable way which relates to the way the lexical and syntactic discourse analyses were performed. Each case description (Chapters 5, 6 and 7) first focuses on the contextual aspects (i.e., organization, change and intentional context) of the organization by using the data gathered in the semi-structured interviews. Next, the lexis by performing word count on formal written language in organization and/or project documents is described. This is followed by the syntactic discourse analysis, using the DA framework, on formal and informal meetings in which the oral language of stakeholders forms the basis for the utterances.

The formal and informal conversations have been analyzed in both a vertical and horizontal manner indicating that mostly the formal organization documents and formal change interventions can be seen as a form of vertical (i.e., top-down) communication between managers and end users, while during formal and informal (project) meetings with stakeholders the horizontal communication took place between different professional groups. Every case chapter also answers the subquestions as described in Section 1.1.

Although it is not the main purpose of this study to give a final opinion concerning the change result for each case it is useful for answering the main research question, and to relate the typical professional discourse, culture and contextual aspects to the change success or failure. However, the way change projects are considered to be successful or if they are seen as failures is strongly linked to the opinions and perceptions of the different stakeholders. Asking the stakeholders can then be considered as an subjective way to measure change programs. To make the measurement more objective we added an indicative method of measuring the change results by taking three criteria often used in IT-related change projects, namely; time, budget and performance (Meredith and Mantel, 2006). In addition we evaluated the change results afterwards by asking different key players in the three cases, being stakeholders in the change projects at that time. The change results will be discussed in the Chapters 5, 6 and 7 separately for every case and in Chapter 8 across the three cases.

Finally, Chapter 9 answers the main research question, describes our findings, draws conclusions, and it gives directions for future research. Table 1.1 gives an overview of the three cases and the primary focus within each case. By using this overview, the reader can be selective in his reading.

The first case is about a Home Utilities organization (Case 1) with a focus on the specific discourse used by different actors while implementing new work processes supported by innovative information and communication technology. This change project can be seen primarily as a technical innovative push because the goal was to implement a Tablet PC and to establish new standardized work processes, but it was also meant to improve the core competencies of the service engineers, which can be seen as social innovation. The organization context and change context can be defined as hierarchical and it follows a strictly planned change approach, which in turn finally led to the implementation of the Tablet PC. However, the change project management was not able to remain within the planned time schedule, budget and resources. The interaction between the project members within the project team, between the project members and service engineers in the field, and the stakeholders who interacted during the change interventions is subsequently analyzed in a syntactic way.

Table 1.1 Focus of study in three different cases

Case	Primary focus within the case / nature of the change program	Sector	Methodology	Chapter
1	Implementation of an innovative ICT tool for service engineers (Tablet PC). This case gives insights into the specific discourse and culture used by different professionals and the effect on their cooperation and understanding.	Home utilities	Participant observations Interviews Discourse analyses	5
2	Implementation of a Maintenance, Repair and Overhaul (MRO) system for aircraft maintenance. This case gives insights into the specific discourse and culture of service engineers on different organization levels and their departments.	Aircraft maintenance	Idem	6
3	Change program addressing a change in behavior of service engineers and area coordinators from a technical working attitude towards a customer-oriented attitude. This case gives insights into the professional discourse and culture when a change in behavior is realized without a strict change process.	Housing association	Idem	7

The second case focusses particularly on the interaction of service engineers who carry out aircraft maintenance, engineering, and purchasing and logistics within a low cost carrier company. The participants work at different organizational levels (i.e., management, staff, shopfloor) while implementing a new Maintenance, Repair and Overhaul (MRO) system. Moreover, this case can be seen primarily as a technical innovation, even though the employees had already worked for more than 15 years with an existing MRO system, but this system had become outdated and it was no longer supported by the supplier. The organization context and change context can be defined as egalitarian, closely related and a more developmental change approach that delivered the new MRO system within the time limit and budgetary constraints, but with limited functionalities that had to be worked out in addition. In this case, the change agents and the objects of change share similar professional backgrounds (i.e., aircraft engineering) which might lead to other insights regarding the differences in professional discourse styles and the assumed misunderstanding.

The third case is again different because the change process focused on a required change in behavior of the service engineers due to a new strategic vision developed by the management. This change process merely started as a social innovation and it has no technical innovative elements. In this case the organizational context and change context can be defined as egalitarian with an connected island culture and an interactional learning change approach without any formal change project team or strict deadlines. This finally resulted in a gradual shift of conversational topics by

the service engineers and a shift could be observed in their behavior. The most measurable result in this case was an estimated decrease in the housing maintenance costs by 25%, although this was not realized by the change project alone. Other activities, which were not directly related to the change process, and which had been initiated in the organization also helped to establish this financial result. This third case is used to see if the discourse analysis can be used in a different change program (i.e., interactional learning) and with a different 'subject of change' (i.e., behavioral change).

1.6 Summary

This first chapter gave an overview starting with a brief introduction which led to the problem statement, including the research question and aim of the study. The main research question is: *What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?*

By answering this question, and the related subquestions, this study aims to provide practical suggestions for professionals (i.e., service engineers, managers and consultants) on how to make their implicit professional assumptions, which form a part of their professional culture, more explicit by their professional discourse when interacting with other professionals in change processes. Particularly these practical suggestions might be beneficial for managers and consultants because they are usually the initiators and facilitators in change projects and they need to be aware of their own professional discourse and how that can affect conversations, the interaction and the sensemaking of other participants in the change process.

In addition this study aims to contribute to the change management literature by showing that professional discourse and culture can be an important aspect to take into account when investigating failure or success factors in change projects. This study suggests that being aware of differences in professional discourse styles involves a much deeper level than simply making the suggestion that (change) managers should have a communication plan in order to communicate the change they want to achieve. When talking about 'power to' instead of 'power over' (see Chapters 2 and 3) communication it will be important to truly understand professional discourse and culture. This chapter also described the theoretical background of this study by giving two 'extreme' theoretical perspectives in both change management and linguistics, which can be seen as the theoretical gap in the existing literature and indicate the relevance of this study for both scientific and practical purposes. (See also Chapters 2 and 3).

This study researched three cases because they allowed gathering data in the organization context in a real-life situation instead of conducting research 'on the organization.' A focus was placed on professional discourse and culture by making a subjective judgment of the change results in the end in each of the three cases with similar professional groups, but within different organization and change contexts, which was verified three years later during evaluation sessions with some of the stakeholders (see Chapters 5, 6 and 7). The three cases are described in parallel by using the same methods to analyze the professional discourse and in a cumulative way by adding TI and SI.

Finally, this study has the potential to generate relevant implications for professionals (i.e., managers, consultants and service engineers) who participate as stakeholders in organization change programs. By understanding change on a professional discourse level a fresh insight into the reasons for success or failure of organizational change might be made.

Chapter 2
Theoretical perspectives on change

The main research question for this study is: *What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?* This question implies that the literature regarding organizational change and professional discourses and cultures is relevant. In order to review the literature, one should first inquire as to what the state-of-the-art in the body of knowledge is, what might be useful to learn, what knowledge is lacking and finally, which path should this study pursue? With the main research question in mind we started to read the literature by asking several questions: What is known about success and failure in change management literature? What can the literature teach us about different theoretical change management perspectives, such as the planned and emergent? Which factors, described in the literature might affect the final change result? What is known about resistance to change?

In the Chapters 2 and 3 we subsequently focus on the change management and linguistics literature. These two scientific fields are combined to create an overlapping field that focuses on professional discourse and culture. Figure 2.1 shows an overview of these scientific fields and the different perspectives that have been taken in this study. The two theoretical perspectives on change management described in this chapter were choosen because they reflect a specific time frame and development of research as found in the literature and as practiced in organizations. The strict theoretical distinction that can be made between these two perspectives is different for organizational practice in which a mix of these two different perspectives of change can be seen frequently. For example, within the planned change perspective also a gradual shift from strictly planned towards a top down organizational learning approach is found in practice.

Section 2.1 describes the reasons found in the change management literature for success or failure. It is argued that other reasons might be important as well, and a better understanding can be obtained of the interaction processes incorporating the professional background of those involved in change. One of the reasons why change projects fail, which is often mentioned in the literature is resistance to change. This is discussed later in Section 2.4. Both Sections 2.2 and 2.3 describe the theoretical perspectives of planned and emergent change, depicting them as two extremes on a scale to study change processes in organizations. These two different change perspectives imply other issues, as they focus on the ways employees and managers communicate. Finally, Section 2.5 summarizes this chapter and describes the subquestions of this study that are related to change management.

Figure 2.1 shows the scientific fields, the different theoretical perspectives, and forms the explorative conceptual framework of this study.
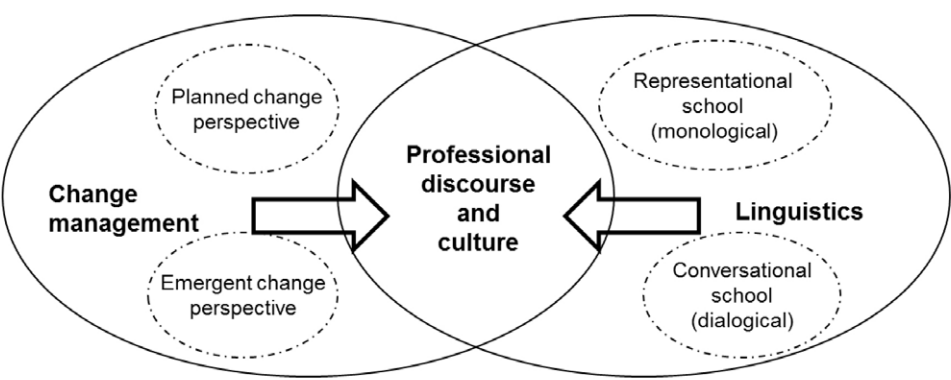
Figure 2.1 Scientific fields and different perspectives used in this study

The overlapping sphere in Figure 2.1 represents the gap in the literature. On the one hand, present studies on linguistics do not pay very much attention to professional discourse and language use in change management, and on the other hand, change management hardly pays any attention to the effect of differences in professional discourse and how that might affect the change process. Communication, in general, is always a point of focus in the literature on change management but in many publications the question of 'how should the change message be communicated?' is the central focus rather than taking a look at the interaction, sensemaking and professional discourses used. This study assumes that the impact of the communication and what people 'actually do with it' does have a substantial influence on the change result, especially when different professionals are involved, and therefore an attempt has been made here to gain more insight into how this discrepancy can be addressed.

2.1 Why change programs succeed or fail

This section starts providing the reasons found in the literature which explain why change programs succeed or fail. They show that in traditional change management literature professional discourse is not primarily seen as an important factor which could possibly affect the change results.

Organizations must change and adapt continuously to remain competitive (Balogun and Hope Hailey, 2008) nevertheless, effective organizational change seems to be rare (By, 2005; Meaney and Pung, 2008). Recent statistics revealed that only one-third of organizational change efforts were considered to be successful by their leaders (Meaney and Pung, 2008; Beer and Nohria, 2000). Apparently, implementing successful change programs in organizations appears to be quite problematic despite the research that has been done to explore why change programs fail or succeed. According to Walston and Chadwick (2003), many change projects are not systematically

evaluated making the reasons for their failure or successes somewhat disputable, but in general change management literature primarily mentions a list of do's and don'ts which are then discussed briefly.

Kotter (1996) mentions in his eight step process for change factors causing the lack of success, i.e., there was no sense of urgency, no powerful coalition, no vision, no buy-in communication, no empowering actions, no anchoring of changes in the corporation's culture, no long-term wins, and no clear actions to make the change stick within the organization. Furthermore, Beer and Nohria (2000) state that the timing and tempo of the change programs happened too rapidly, too slow, or there were too many different changes at the same time. Pfeffer (1992) mentioned that some leaders were too strong and others had insufficient autonomy to finish the job (Beer, Eisenstat and Spector, 1990). Moreover, the role of the consultant is explored regarding his communication and negotiation strategies, thus balancing differences in interest and establishing high quality change results (Carney, 2000). This is also found by Argyris (1990, 2000) in his research upon the role of management communication. There is a difference between what managers say and what they actually do. Furthermore, Argyris found that in general managers have a strong need to stay in control, especially when they experience resistance or difficulties in realizing organizational change (see also Ardon, 2009).

In general, we can observe management theory 'categories' why change failed, i.e., goals and strategy, organization culture and leadership, technology and systems, power, politics, behavior and skills, the change management process itself, communication or resistance to change (Pfeffer, 1992). However, these reasons are generic and it seems that each scientific discipline such as, strategy, leadership, culture, and organization behavior views an organization from its own perspective (Boonstra, 2004).

Change can only be understood when all of the relevant and influencing relationships between various factors such as culture, leadership, organization structure, systems, personality, are taken into account. Research has also explored the factors which lead to successful changes in organizations, but again these success factors are generic and described as follows; change approaches can vary depending on the situation at hand and one approach is more successful than another, people feel motivated when they have meaningful work and the more motivated the more successful a change project might be, change is a process of interaction between people and better interaction might lead to successful change, and the active participation of employees who are involved in the change process has a positive effect on their support, thus on realizing the change project (Pfeffer, 1992). The active participation and involvement of employees shifts attention to Organizational Development (OD) in which "the focus is on building the organization's ability to assess its current functioning and to achieve its goals" (Cummings and Worley, 2009: 1). In this OD process principles of the behavioural sciences are used to increase individual and organizational effectiveness. Nevertheless, all these factors are still quite abstract and they do not mention in particular professional discourse and culture differences of participants involved in organizational change.

In conclusion, many reasons can be found in literature why change programs succeed or fail, but it is questionable if they are helpful from a managerial point of view. The reasons mentioned are often too generic and focus just on partial aspects of organization reality. We argue that each

change program contains both subjective and objective dimensions. The objective dimensions relate to measurable goals such as quality improvement of products, financial goals or increased customer satisfaction. The subjective dimensions relate to social interactions and the conversations that take place. This implies that the measurement of change results can be difficult.

Traditionally managers are eager to define change objectives in hard and measurable figures (often a budget or time), but the more covert (or below the sea level) elements are subjective. Einstein's quote; *'not everything that counts can be counted, and not everything that can be counted counts'* represents clearly the difficulties when measuring change results objectively. Nevertheless, the measurement of organizational change success is based on three criteria often used in IT related change projects (Meredith and Mantel, 2006). The three criteria are; 1) time, 2) budget, and 3) performance. Time refers to due dates, mile stones and schedules that have to be reached. Budget refers to the project cost (and benefits), and is often limited to a project. Performance relates to amount of necessary resources and required investments (i.e., man hours and materials) needed to establish the required change result. Although it is not the main objective of this study to measure change success, it is considered important because we want to know how the discourse and culture interaction of participants is reflected in the ultimate change results, and as key players see it in retrospect three years later. For every case (see Chapters 5, 6 and 7) we give an interpretation of the change result, which is also based on an evaluation with the key players.

One of the subjective dimensions that are difficult to measure is described by Dibella (2007) stating that studies should pay attention to the dynamics of change processes and the way in which people interpret a change project. Boonstra (2004: 11) describes this as "playing with dynamics and uncertainty" resulting in interactive learning. Some principles of interactive learning as mentioned by Boonstra are; self-organization, having multiple realities, interrelatedness of actions, constructs, contexts and participants, striving for sensemaking, and interaction. The interaction dynamics between participants are reflected in their language usage, hence, also in their discourses (Barrett et al., 1995; Boje, 1991; Di Virgilio and Ludema, 2009; Garzone and Archibald, 2010). When the different professional groups, that are cooperating in a change program assign different meanings to the change situation and the words used in the context of the change situation, these differences can result in resistance to change from those who are involved. Impaired mutual understanding can lead to negative affections towards members of other professional cultures, resulting in decreasing motivation to cooperate. It is argued that the way people make sense of the change program has important implications for the effectiveness of change programs (Weick, 1995; Homan, 2005). Thus, problems in change programs can also be attributed to subjective sensemaking dynamics (Ford, et. al., 2008; Ford and Ford, 2010). By using the three dimensions (time, budget and performance), and combining them with discourse analysis, we might get better insights in the dynamics of organizational change.

In Sections 2.2 and 2.3, two theoretical perspectives on change management are described. These two perspectives can be considered as extreme anchors on a continuum scale of change management approaches. Both, and the many hybrid forms in between, are used in organizations. This study describes first the planned change perspectives and second the emergent change perspective. These two perspectives can be used as a theoretical lens to study organizational change in the three cases.

2.2 The planned change perspective

Based on the comparison Weick and Quinn made (1999) between episodic and continuous change, using the five properties as suggested by Dunphy (1996); 1) metaphor of organization, 2) analytic framework, 3) ideal organization, 4) intervention theory, and 5) role of change agent, organizations in the planned perspective are seen as inert, and change is an occasional interruption. Change tends to be dramatic and is driven mainly externally. Interventions are required to break the equilibrium and transition into a newly created equilibrium. Planned change is often seen as a standardized process with a focus on one organizational problem, top-down driven by top management in order to realize a solution and solve the problem (Weick in Beer and Nohria, 2000). According to Bennis, Benne, Chin and Corey (1979) planned change is about how change is created, implemented, evaluated, and maintained. Boonstra (1997) describes planned change as changes that are initiated, guided, and controlled by top management. This structured way of thinking makes the planned change approach "something that can be stopped or started at will" (McMillan, 2004: 65), and therefore it might be an attractive solution for change agents.

A major example of this approach is Lewin's (1951) model in which change has been introduced as a three-step process (unfreeze, move, refreeze). However, Lewin's approach of planned change originally consists of four elements; 1) field theory, 2) group dynamics, 3) action research and 4) his well-known three step model; unfreeze, moving, refreezing. "Lewin was a humanitarian who believed that only by resolving social conflict the human condition could be improved" (Burnes, 2009: 332). By facilitating a learning process that enables individuals "to understand and restructure their perceptions of the world around them" Lewin approached change as an interaction process between participants. Lewin used insights from Gestalt psychologists, made use of group dynamics and insights from psychology to understand change in organizations (Bion and Lewin, 1951).

The field theory explained by Lewin is an approach that can be used to understand group behaviour and certain forces that maintain the current situation. Lewin (1947, in Burnes, 2009) states that the behaviour in a group is a difficult combination of interactions and forces that affect group structures and individual behaviour. The group dynamics element of Lewin's change approach "stresses that group behaviour, rather than that of individuals, should be the main focus of change (Bernstein, 1968; Dent and Goldberg, 1999 in Burnes, 2009: 335). Burnes (2009: 335) states that it is useless trying to "change individual behaviour because the individual is constrained by group pressures to conform." This study also assumes that professional discourses are closely related to professional groups and their identities leading to the group pressures mentioned by Burnes. Also the interaction and sensemaking between participants in change is considered crucial for successful change.

In 1946, Lewin wrote about action research saying that it is a "participative and collaborative process which involves all of those concerned and that change can only successfully be achieved by helping individuals to reflect on and gain new insights into the totality of their situation." Action research itself is an iterative process whereby research leads to action, and action leads to evaluation and further research (Burnes, 2009). In this process the interaction and involvement of all participants is crucial, but also difficult because of the possibility that professional discourses and cultures have to cooperate.

Finally, Lewin's three-step approach (unfreeze – move – refreeze) is cited most, and is often considered as a planned change approach, but it has to be seen in close relationship with the other three elements described before. "Lewin saw the four elements as forming an integrated approach to analysing, understanding and bringing about change at group, organizational and social levels" (Burnes, 2009: 338). Despite Lewin's four elements change management literature primarily describes the three-step approach as a planned change process. In most of the 'popular science' books available for managers, this three-step model is the only element described to manage change. Thus, the more social and interactional related aspects in Lewin's theory are not mentioned. The three-step change approach of Lewin can be seen as; inertial, linear, progressive, goal seeking, and requires outside interventions, and it is assumed that change management consists of a (limited) set of interventions and actions, which can be applied to any change situation: a one approach fits all perspective (e.g., Kotter, 1996). The exploration of existing knowledge in the group of participants is considered less important for realizing change success.

Later Chin and Benne (1974) developed different strategies for change and implementation, namely: 1) empirical – rational (self-interest and rational), 2) power – coercive (power and negotiation), and 3) normative – re-educative (targets, skills, relationships and learning). More attention was paid to resistance to change and Bennis (1966) shows that change has to do with conflicting interest, (professional) identity, work and status. During this period, there was more focus on individuals and groups instead of on organizations as a whole. The organizational context plays an important role when deciding what kind of change approach should be used. "Planned change may be better able to capture attention and focus on a single direction. Planned change affords a pretext and cover for changes that may be peripheral to the transformational vision, but which are regarded as desirable, nevertheless; it is usually in keeping with the distribution of power, giving key stakeholders the impression of a rational program and options for implementation" (Weick in Beer and Nohria, 2000: 227).

Despite the fact that many years have passed since Lewin developed his three-step model, there is still a strong tendency to practice change in a planned and manageable manner. This planned perspective seems to dominate current thinking about change and change management in organizations. Organizations are viewed as entities that move from one state to another in a forward direction through time, moving from a less developed state to a more well developed state, moving from a specific-end state that is envisioned, to then only move when there is disruption and disequilibrium, and move only in response to forces in- or outside the organization (Marshak, 1993). Cummings and Worley (2009: 1) describe Organization Development (OD) as "a systemwide application and transfer of behavioural science to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organization effectiveness." Also other definitions refer to OD as a planned process (see Cummings and Worley, 2009). Boonstra (2004) mentions that OD is based on the principles of planned change. This implies that a gradual shift from strictly planned to OD and interactive learning approaches for change are considered to represent the planned change perspective. Bushe and Marshak (2013: 1) also state that OD involves mainly planned change, but it becomes dialogic OD when organizations are perceived as "socially constructed realities created and sustained by the prevailing narratives, stories, and conversations through which people make maening about their experiences."

Nevertheless, there is an increasing attention for the idea that organizational change is more an emergent and open-ended process than a set of interventions that can be thought of and planned upfront without unforeseen actions. Dunphy and Stace (1993: 905) argue that, "turbulent times demand different responses in varied circumstances. That is why managers and consultants need a perspective on change that is essentially a situational or contingency model, one that indicates how to vary change strategies in order to achieve an optimum fit with the changing environment." Although this seems to be another theoretical perspective on change, the situational and contingency model are often seen in practice using the same underlying assumptions as in the planned change approach, namely that change processes are manageable when taking the organizational situation at hand and instead of starting and stopping change at will to be aware of the fact that change is rather an on-going process.

2.3 The emergent change perspective

Weick (in Beer and Nohria, 2000: 223) describes the aim of elaborating on emergent change as "to create a richer picture of organizational change." He argues that the theoretical thinking preferences (i.e., planned versus emergent) about change will affect the change result. Furthermore, Weick and Quinn (1999: 366) state that "change can also been seen as a continuous process of modifications in work procesess, systems, structures and social practice." Burnes (2009) argues that the underpinning rationale for the theoretical emergent change perspective is that the environment in which organizations operate is changing, and will continue to change, rapidly, radically and unpredictably. Nevertheless, we consider the emeregent change perspective as something that is not a result of external triggers, such as the organizational environment suggested by Burnes, neither is it something that is initiated by management or employees (or both). Emergent change just happens. Within emergent change there is a continuous sensitivity of all organizational members to local contingencies, real-time experimentation, learning, sense-making, exploitation of existing tacit knowledge, and feedback loops from results to actions (see Weick in Beer and Nohria, 2000). Initiatives for change are started in the emergent practice of organizations by all organizational members (both employees and managers) that acknowledge in their daily practice the possibilities to improve; change comes in overall and looks like work. Change projects are then often executed without formal project team, but performed in the normal line structure of the organization.

Burnes (2009: 355) states "that change is an open-ended and emergent process of adapting to changing conditions and circumstances; and it also sees the process of change as a process of learning, not just a method of changing organizational structures and practices" He argues that it is more suitable to the turbulent and continually changing environment in which firms now operate to practice an emergent change approach. The argument of Burnes can be seen as an advice for management how to execute change. Caldwell (2006: 77) describes emergent change as a "long term complex and incremental process of shaping how change unfolds over time." Emergent change is also viewed as holistic and contextual. This theoretical perspective thus features change as a more dynamic process, context-related and (inter)subjective. There is more attention for interaction processes and sensemaking between the participants involved in change.

The theoretical insights of change management described above seem to fit in the development of society over time. In times of mass production, when markets are growing and when employees

are seen as a production factor, the management of change is more linear, planned, directive, and top down using a command and control approach. This rather objective way of thinking nowadays still echoes in many change processes. It is a part of history, but it also determines later organizational developments. When employees were not purely regarded as production factors, it was noticed that paying attention to individual needs and motives could benefit the organization. This way of organizing and the use of resources is a management practice in order to produce efficiently and effective, but is not the theoretical perspective of this study. The gradual shift from a product-oriented towards a service-oriented society with highly educated knowledge workers made it necessary to add human needs to the different theoretical change perspectives. However, the former way of thinking (i.e., the theoretical planned change perspective) about organizing has a firm base in our doing (i.e., the practise of organizations). Knowing that both change approaches are practiced in organizations this study takes the theoretical emergent change perspective as a lens to investigate the three cases.

2.4 Resistance to change

This section addresses the importance of understanding resistance to change because this is a recurring aspect in Chapters 5, 6 and 7 where the three cases were examined. Resistance to change is a prominent theme in the change management literature (Cummings and Worley, 2005; Senior and Swailes 2010). The way in which it is defined depends on the theoretical perspective chosen. Two main perspectives can be identified: 1) conventional change management literature and 2) critical perspectives on change management. In this study, we link the conventional change perspective to the planned change perspective, and the critical change perspective to the emergent change perspective as previously described. For overviews of the conventional perspective, see Armenakis and Bedeian (1999), Pettigrew et al., (2001), and Beer and Nohria (2000). More recently the special issue of the *Journal of Change Management* expands the "dialogue surrounding the nature of resistance to change in organizations and explore its role in effective change management (Carlon and Downs, 2012).

The core assumptions shared in the conventional perspective are that change is imperative (change is good, stability is bad), and that change should be managed and controlled (Weick and Quinn, 1999). Furthermore, the models and approaches for managing change are framed in the interest of management (Sturdy and Grey, 2003). In contrast, critical change management literature questions whether change and stability are two mutually exclusive and objective states. Naturally, the interpretation might very well depend on the person's perspective and position who defines it. Stability might be regarded as 'unnoticed change' (Kanter et al., 1992). Moreover, change cannot be idealized, as it is highly unlikely that all of an organization's members will be equally enthusiastic about yet another change project (Brown and Humphreys, 2003).

Conventional change management literature
In the conventional change literature (i.e., planned), resistance to change is generally perceived as collateral damage resulting from change endeavors. Resistance can be manifested in various ways, varying from foot-dragging, withdrawal, material sabotage and whistleblowing (Carr and Brower, 2000) to strikes, working to rule and symbolic sabotage (Fleming and Spicer, 2003). As organizational change is conceived of as being desirable and inevitable, those who resist it are

framed as being irrational. This framing entails that resistance should be managed and overcome (Atkinson, 2005). It seems in this perspective that change agents, being the senders of change are opposed to the change objects, being the recipients of change, demanding a win or lose strategy to resolve the conflict (Carlon and Downs, 2012).

Within the boundaries of planned change management literature, several alternative perspectives on resistance to change can be found. Piderit (2000) suggests that it is a multi-dimensional concept. The multi-dimensional concept implies that the dichotomy of being for or against change is too simplistic, and that it does not reflect the complex reality of people's responses to change programs. In regard to this concept, Fleming and Spicer (2003) state that studies on resistance should consider subjective states as well as actions. Sometimes people overtly follow a change initiative, while covertly they resist, taking a cynical stance and legitimizing their compliant action as not me. Also, when different professional groups are cooperating in change, identity-based resistance can occur and is seen as an obstacle to overcome (Mahadevan, 2012b).

Yet, another perspective is found in Ford et al., (2008), who describe that resistance to change can be generated by biased managerial sensemaking or that it can result from ineffective, unethical change agents practices. Furthermore, they reframe resistance as a resource for enhancing change effectiveness. By paying careful attention to the change critics, management can discover weak points in the change approach. These publications illustrate that new perspectives on resistance are being explored, but it is still assumed that change is undisputedly desirable and that change and resistance can and should be managed. Analyzing the three cases from this theoretical perspective will give different outcomes compared to analyzing the same situation from a critical perspective on change management and resistance.

Critical change management literature
In the critical change management literature (i.e., the emergent perspective) two themes predominate when resistance to change is discussed: 1) power[3] and 2) discourse. The first theme associates resistance to change with unequal power relations. Critical change management authors state that in mainstream (change) management theory, power is circumvented by using euphemistic concepts such as leadership, governance, and empowerment (Kärreman and Alvesson, 2009), but observers should not ignore the social realities of power (Pfeffer, 1992). By paying attention to power dynamics, different perspectives on resistance to change can be brought to light. Kärreman and Alvesson (2009) suggest that power can be understood from three different perspectives.

First, power can be defined as a restraining force, where one actor makes people do things that they otherwise would not have done. In this view, resistance is an unconcealed reaction to the overt use of force. This perspective resembles the conceptualization of resistance to change in

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3   Power has also been studied by Habermas and Foucault with both having taken completely opposite views. Habermas argues that "argumentation insures that all concerned in principle take part, freely and equally, in a cooperative search for truth, where nothing coerces anyone except the force of the better argument. The only form of power which is active in the ideal speech situation and in communicative rationality is thus this "force of the better argument" (Habermas, 1990: 198, in Flyvbjerg, 2001: 90). Foucault, on the other hand, argues that "our history endows us with the possibility to become aware of those social arrangements which create problems and oppressive relations of power or those which create satisfaction and strong democracy. It follows that we have the possibility either to oppose or to promote these arrangements" (Flyvbjerg, 2001: 101). "Bourdieu sees power as culturally and symbolically created, and constantly re-legitimised through an interplay of agency and structure" (on www.powercube.net accessed on 4 June 2013). This study adheres to the views of Foucault and Bourdieu based on practical experiences and sees the vision of Habermas as a challenge. Nevertheless, for this study these cultural philosophical works have been found to go beyond the scope of this study.

conventional change management literature. This form of 'power over' is still often used in the planned change approach when monologic communication prevails over dialogical communication (see also Chapter 3).

The second perspective on power focuses on how ideologies and cultural socialization make people comply with the existing order, without using explicit force and avoiding overt conflicts. This social power entails that a certain discourse becomes the naturally accepted one, creating the identities, values and social practices of those involved (Grant and Marshak, 2011; Mumby, 2001; Hardy and Phillips, 2004). This view articulates the manipulative side of power. Employees are depicted as being at the mercy of their managers who apply discursive techniques in order to silently imbue the workers with compliant mindsets. Resistance is almost impossible because the dominant discourse is seen as the natural order of being, prohibiting reflection upon it.

The third perspective conceptualizes power as a productive force and an integral element of all human relating (Homan, 2013; Stacey et. al., 2000). For people to collaborate, they have to interact and arrive at a certain degree of shared understanding (Weick, 1995). What is typically characteristic of this interaction is the struggle for meaning (Gergen, 2000) which in turn results in a 'negotiated reality' (Eden and Ackermann, 2004). Resistance is now viewed as an integral element of the power play, and can be made productive. This third perspective on resistance and power is particularly useful when trying to understand and analyze the type of resistance discussed in this chapter. It requires a 'power to' form of communication.

The three different forms of power indicate that 'negotiated power' in interaction can be viewed differently implying that the change processes will work out differently and in the end might lead to other change outcomes. Key in these three perspectives is the role of discourse (Sturdy and Grey, 2003; Monge and Poole, 2008). Discourse analysis could provide an alternative approach for studying organizational change management and resistance (Sturdy and Grey, 2003), and it has become an important methodological stance in organization studies (Alvesson and Kärremann, 2011; Grant and Marshak, 2011; Grant et. al., 2004).

The above mentioned studies are based on the idea that organizations consist of discourse (Monge and Poole, 2008). That is to say, organizational communication leads to stories, which are made and remade, and are combinations of talk in formal (i.e., meetings, public discourse) and informal (i.e., coffee breaks, sub-public discourse) settings. Language is regarded as a vehicle to construct meaning instead of a medium to transmit information (Garzone and Archibald, 2010). Hence, language is an essential part of individual and collective sensemaking processes.

Talks, conversations, and use of language are expressions of one's beliefs and reflect the social community to which one belongs. Most functionally oriented organizations contain various discourses (Biber et al., 2007). In fact, each professional develops his own professional discourse based on education and experience, and develops his language further by interacting with peers. Discourse analysis of organizational change and resistance has been examined mainly from a 'vertical', hierarchical perspective (i.e., vertical communication). For instance, Dunford and Jones (2000) and Knights and Willmott (1992) investigate how top managers convince lower level employees of the importance of a change project. These authors focus on the language and rhetorical strategies managers use to convince their subordinates.

Furthermore, Brown and Humphreys (2003), Doolin (2003), Grant et.al., (2006) and Schwanberg O'Connor (1995) have uncovered the discrepancies between management and employee discourses with regard to change endeavors. They have studied the tug-of-war between professional groups, as it is reflected in discourses, and the implications for the (in)effectiveness of organizational changes. Yet, discourse problems also emerge in the horizontal dimension of interaction involving peer groups (e.g. horizontal communication). For example, project team members of different departments that have to cooperate when implementing change projects. When people with different professional backgrounds interact, the same words might be interpreted differently (see Chapter 3 about the conversational school); varying interpretations prohibit the development of shared mental models. Conversations continue without real mutual understanding, which in turn, lead to confusion. The confusion fuels negative emotions and resentment, which subsequently might lead to mental withdrawal, such as not being receptive to others' ideas, declassifying, and thinking about the other negatively. From then on, cooperation will be difficult, changes will meet resistance, and the change project is doomed to fail.

This study regards service engineers, managers and consultants as separate professional groups using a specific discourse in addition to other professional groups that have their own discourses. It is argued that the misalignment of these professional discourses can be a major source of resistance to change and is related to differences in professional values, mindsets and assumptions about the identity of other professional groups.

2.5 Summary and research implications

This chapter reviewed the change management literature relevant for this study. The two different theoretical perspectives have been described and conceptual preferences are explicated. For change management the focus has been placed on planned and emergent change perspectives as theoretical lenses to study organizational change. Starting from the literature on change management, many reasons were found for the success and failure of change programs, but the importance of language usage in sensemaking processes between participants is rarely mentioned. It is argued that there might be other reasons why change failure rates are approximately 70%. One of the reasons might be that differences in typical professional discourses is an important, but not often foreseen obstacle in the cooperation between different professional groups in change programs.

The review of the organizational change literature shows that each of the two different theoretical change perspectives, point to the importance of taking the organizational context and the practical change context into account. This leads to the first research subquestion:

1. W*hat is the organization and change context of the three cases?*

The review also indicates that in both change perspectives employees and managers interact, discuss, reflect and make sense of what is happening within the change process. On this individual level the intentional context plays an important role. Furthermore, this individual intention of the speaker concerend would trigger also the culture of the professional community to which he belongs. This culture is disclosed in the professional discourse used, making it important to ask the

second research subquestion for this study, namely:

2. W*hat is the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants?*

We also focused on literature related to resistance to change since in all three cases studied this was a recurring topic in the organizational change process. It can be assumed that differences in professional culture and discourse might be an reason for resistance to change. Therefore, a third research subquestion is considered to be important, namely:

3. *Can a difference between Professional Culture (PC) and Professional Discourse (PD) of different professional groups be a cause of resistance to change?*

This study considers professional discourse and culture to be essential in the interaction between humans. As a consequence, both the theories of change management as well as those that apply to linguistics should be combined (see Figure 2.1). Grant et al., (2004) notice the urgency for organizational researchers to use and apply a range of discourse analysis (DA) to investigate organization dynamics. Thus, by taking a discourse perspective on organizational change sensemaking in change processes can be studied. Therefore the next chapter will focus on the linguistic literature relevant for this study.

Chapter 3.
Theoretical perspectives on linguistic

This chapter describes the linguistic literature relevant for this study. Similarly to Chapter 2 we asked several research questions but now from this discipline: What is known about the specific role and function of language in general and especially in relation to change projects? What can be the role of language in the different theoretical change perspectives as described in Chapter 2? Furthermore, what is known in the literature about (professional) discourse and culture of service engineers, managers and consultants? Finally, what kind of methodological instruments are known in the linguistic literature to study discourse and interactions between different professional groups?

In Section 3.1 the role and function of language is described, which is followed by an explanation of the representational and conversational schools in Section 3.2. Once again, two polar anchors are given which both accommodate the two theoretical perspectives taken on change management, as is later shown. The monological communication might fit with the theoretical planned change perspective, whereas dialogical communication possibly fits with the theoretical emergent change perspective. Section 3.3 describes the importance of discourse in interaction, while Section 3.4 focuses on the various definitions and levels of discourse. Section 3.5 commences with a description of characteristics of the three professional groups in this study followed by Section 3.6, which refers to the professional discourse and culture of (service) engineers. Section 3.7 describes the linguistic discourse analysis (DA) framework used in this study (see also Chapter 4). Finally, Section 3.8 summarizes this linguistic literature review and presents the research subquestions.

3.1 Linguistics; the role and function of language

Language is important in our daily conversations, in all our social interactions with family, relatives, within organizations and in societies. Language is the only thing we have to express feelings and to facilitate problem solving (Nardon, Steers and Sanchez-Runde, 2011). O'Grady (in O'Grady, Archibald and Katamba, 2011) mentions that language is above all a human characteristic and is used when talking, thinking, reading, writing and listening. It is part of the social structure of our communities in which language is not just a part of us, but it defines us. In this sense, the shaping and being shaped through language, discourse and professional culture has become a part of this study. Linell (2009) argues that language is not functioning by itself, but it is interdependent with the world, with all human actions when interacting and thinking. In this section the focus is particularly on language and different discourses in an organizational (i.e., social) context. Within this study, we define language as a potential 'reservoir' of sounds and words used for all possible utterances to communicate during interaction, whereas discourse is a specific 'language-network' developing in conversations in order to make sense and create mutual understanding. Professional discourse can be considered than a sub-set within the reservoir of language. Additionally, we consider that organizing and change is particularly a conversational process in which professionals make sense of their organizational environment.

Language in a social context

Sociolinguistics researches the relationship between society and language. This study sees organizations as societies in which employees, managers, customers, suppliers, board members, shareholders and so forth use language to interact with one another to solve organizational problems. However, outside the organization these people also belong to a society in which they fulfill different roles (i.e., father, brother, neighbor). Language plays a crucial role in social interaction and we perform these social roles using language that suits within the situation and interaction (O'Grady, 2011). Variations between language in communities reflect social aspects such as national regions and culture, age, gender, and religion. In organizations (and also outside) circumstances influence our use of language. Conversational topics and the utterances performed also depend on one's hierarchical position in the organization, the professional community one belongs to, or the subject being discussed.

This context-sensitivism is complex. Linell (2009) makes a distinction between; 1) realized context and 2) contextual resources. The first relates to aspects that are actually communicated and are considered relevant by participants in the particular situation. The second relates to different meaningful phenomena which can become relevant and are accessible for the participants. For instance, strategic reports written by management are contextual resources, but they become a realized context when people actually start talking about them and make sense out of them. The relevant contexts are dynamic and develop in, through and with discourse. The meaning of discourse is accomplished in and through the process of interactions among all participants in that particular situation. Regarding to change it can be understood that there is a formal organizational change program (i.e., the contextual resources), but the participants make sense about the change together within their local conversations (i.e., the realized context).

However, human beings are embedded in social environments (both professionally and personally) whose traditions already have 'pre-constructed' meanings, using discourses. Linell (2009) argues that these constructed meanings only survive when they are useful for participants in an actual situation. It is in these situations that people negotiate and complete the actual situated meanings of their actions and behaviors (e.g., Weicks' retrospective sensemaking). Linell (2009) describes that these pre-constructed meanings can take different forms depending on the context, situation and communicative activities. All of this takes place in interactions with physical and social environments with the abstract things, people, events and circumstances present there and at that moment. These environments have structures in themselves, and afford substance for sensemaking. Thus, language use and professional discourses are strongly related to the socially constructed environment. Linell (2009: 64) uses the term of contextual social constructionism[4] which implies that (professional) discourses differ depending on the situation. This study does not assume professional discourse to be fixed, and it takes the organizational and change context particularly into account.

In the three cases there are different constructed realities based on organization and change contexts, belonging to a professional group, the position in the organization and so forth. The

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4   The terms 'constructivism' and 'constructionism' are often used interchangeably in literature. Wink and Putney (2002: 35) make reference to such a distinction. "Constructivism seems to be preferred when the focus is on the active sense-making processes employed by the individuals when these individuals 'construct' that which they think or talk about in specific situations. Constructionism would then mainly be used when the topic is those concepts, words, assumptions and theories that have already been 'constructed' perhaps by our predecessors. "Therefore, it often implies that the world is already 'populated' with social constructions" (Linell, 2009: 105). This study further uses the term constructivism because the case studies focus on active sensemaking processes of service engineers in a change context.

active sensemaking processes by participants in change programs takes place within an already constructed reality, which than can be either re-enacted or discarded. It is assumed that people actively construct meaning while making sense of the change situation at hand, but this is influenced by their own professional culture, and based on past professional education and experiences. For instance, managers and consultants might have more of a high level abstract overview in which the organizational strategy and goals must prevail. Nonetheless, service engineers might construct meaning based on detailed information about the change process and then they might tend to think in a machine or binary metaphor about the steps to be taken in the change process which fits exactly with their daily ways of working. These different ways of constructing reality emerge through language usage and professional discourse.

Language as a 'tool' for socialization and negotiation
Berger and Luckmann (1996) perceive reality of everyday life as an (inter)subjective world, in which our existence is possible because of interaction, communication with others, relating to others and by making sense of what we see, hear and experience. In this interaction process groups of individuals become more and more socialized and familiar with the usage of a particular local language, its implied meaning, and acceptable statements issued from within that (professional) community. Language plays an important role in this socialization process and it is based on experiences, developed meanings, (professional) education, social background and interactions with others. Within one group this socialization process might lead to a 'constructed reality', a professional discourse and culture in which the members of that group share similar thoughts and ideas and are aware of the implied meaning of the language used. For the members in this group, the typical words or concepts clearly relate to a certain meaning of that word or concept, suggesting that it is objective. Nevertheless, for someone outside that group the words or concepts might have a different meaning.

In constructing reality it then becomes important to observe how certain concepts have to be interpreted, which is also known as signification, that is, the human production of signs (originally developed by Saussure as *signifiant et signifié*). The distinction between signifier and signified is mentioned by Jackson and Carter (2007) using the example of the stylistic pictures of men and woman to symbolize their respective public toilets. Ulijn and Strother (1995) describe the signifier as form and the signified as content. Berger and Luckman (1966) mention that language is the most important sign system of human society. In everyday life language is one of the 'tools' we use as signifier. By our langue use we are able to signify the signified so to say. Understanding reality is possible when we interact with others using language. Language usage then allows the establishing of meaning, and preserves the meaning over the course of time. Language and culture (professional) go hand in hand, they are seperate entities, but intertwined, therefore they are not easy to disentangle.

The constructed reality, expressed in signifiers implying the signified, is the result of ongoing interaction processes of sensemaking between individuals, which can then be seen as a negotiated reality in which power relations and issues of mutual dependency eventually influence the dominant language – the fixation of certain signified meanings to certain privileged signifiers – of a particular group. What then becomes objective, normal and reality for that particular group is the result of negotiated meaning (i.e., signification) of a certain assemblage of words, symbols and language. For instance, when people work in specific positions (i.e., the service engineer) they build up a professional discourse that pertains to their occupation which obviously differs from other

occupations (i.e., the manager and consultant). This professional discourse is meaningful (significant) for someone who works in that occupation, but it might be difficult to understand by outsiders.

To conclude, it is important to understand the possible differences in professional discourse of the participants who interact in change processes because their language used in communication can be both intragroup (within the same group) and intergroup (between or among groups) related, which might result in misunderstanding in the interaction. When peers talk with each other (intragroup) referring to their own profession they usually prefer their typical professional discourse that they are used to. In the interaction process with other non-peer groups they try to persuade the people of the other profession to follow them in their own dominant professional discourse and to make that the legitimated constructed reality. In doing this one of the groups has created a kind of power over the other group because their professional discourse will be used in conversations, thereby leaving relevant issues of the other group out of scope.
The next section describes the representational and conversational schools because they give different insights about how participants can interact and communicate.

3.2 The representational and conversational schools

Within language literature two main schools can be discerned regarding the assumptions about language. For this study, the representational and conversational schools are considered important, because they contain different ideas about the relationship between the signifier and signified as described in the previous section. This can be related to the two perspectives on change management described in Chapter 2.

Representation means that language is used to express a meaning, or to represent the world around us meaningfully, to other people by using signs and images which stands for, or represent things (Hall, 1997). The representational school assumes that in the language use all words, concepts or phenomena refers to a fixed and well known meaning or content. In other words, the representational school assumes that every signifier (i.e., form) has the same signified (i.e., meaning or content) for everyone participating in the communication. The assumed fixed relation between a certain sign and their meanings can be related to the professional background (i.e., service engineers, managers and consultants). These three professional groups will have gradually learned and internalized certain conventions of representation, which enables them to function within their specific professional role, express themselves through speech, writing, and so on (see Hall, 1997) leading towards a professional discourse and culture. During interaction it might happen that the participants do not understand each other, but this could be because they do not realize that they have different professional discourses.

The conversational school explicitly does not assume a fixed coherence between the signifier and the signified, but argues that this is more a loose consistency depending on the interaction of the individuals who participate in the communication. In this view, the social character of language is acknowledged and it is argued that the signifiers (form) will get signified (content) according to the relevance assigned by the participants and suited for the moment in time and situation at hand (Hall, 1997). In that sense it is a constructionist approach in which the participants use language to construct meaning in interaction and at the same time develop a 'situated language.' In this study

the conversational school is relevant for analyzing discourse differences between professionals and how they make sense of the change processes in their organization.

With this introduction of the two theoretical schools about language we discuss next two communication models. First, the well-known sender – receiver model (Shannon and Waever, 1949), which seems to fit within the representational school, and second, there is a self-developed 'model' which we use to express the conversational perspective. It is assumed in this study that differences in professional discourse and culture might affect the organizational change process. This assumption, together with the two theoretical schools about language gave rise to finding reasons for revising the traditional sender – receiver model in which sensemaking and the 'constructionist approach' can be taken into account. First, we briefly describe the traditional sender – receiver model.

The sender – receiver model from a representational perspective
The sender – receiver model (Figure 3.1) has been based on the work carried out by radio engineers in the 1950s (Shannon and Weaver, 1949) and assumes that the sender is the initiator and encoder of a message and the receiver is the one who receives the message and at the same time, he is the decoder of that message. Decoding by the receiver relates to the translation of the senders spoken message into something the receiver understands by using their knowledge of language from personal experience. The sender encodes his idea into spoken language while putting a specific meaning into the message. In the sender – receiver communication the channel, or the medium through which the message travels, such as through oral communication (radio, television, phone, in person) or written communication (letters, email, text messages) is part of the communication process. Most traditional sender – receiver communication models are often represented as linear models with a feedback loop in which the receiver responds to the sender. According to this linear model, when communication fails the improvement is to train senders in formulation and presentations skills, and train the receivers in listening and interpretation skills (Stacey, 2010). Figure 3.1 represents the sender – receiver model which is mostly used in communication.
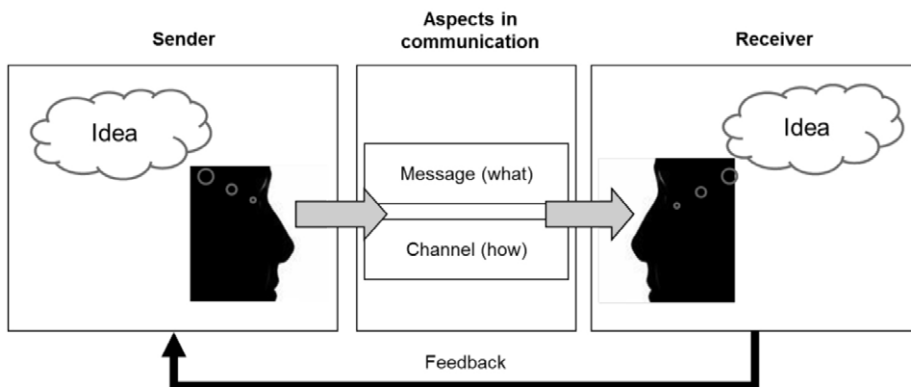
Figure 3.1 The sender – receiver communication model

Ulijn and Strother (1995) expand this model by using an adapted version of the addresser - addressee model of Jakobson (1960), thus adding communication aspects as *setting* (where, for example the enterprise, office or production environment), *topic* (what, specification of the

information), *contact* (how, the professional relationship), *code* (how, verbal conventions which are shared by both sender and receiver), and *the objective* (what, the goal of the communication). These aspects certainly make the sender – receiver communication model more realistic because these aspects can influence the interaction. Nevertheless, senders and receivers also have cultural and individual psychological aspects that must be taken into account (i.e., the intentional context).

Language and sensemaking
Linell, (2009) argues that sensemaking is highly interactive and context related. Some authors (e.g., Weick, 1995; Berger and Luckmann, 1966) define sensemaking as the social interaction process in which meaning, and also the meaning of specific locally important words, emerges. It is an interactional process in which people actively need to participate if they want to find out what they are facing, they need to listen and talk in order to discover what is on their own mind and on that of others. Sensemaking appears to be important when people deal with the unknown, unpredictable world (Weick in Beer and Nohria, 2000). Furthermore, sensemaking is a linguistic process in which words that are combined into sentences produce conversations in which participants convey something about their ongoing experience (Weick, 1995).

We argue that a conversation may be structured, plans about change may be written in project documents, interventions for change may be well organized, but the outcomes are never totally predictable (Taylor and Robichaud, 2004). It is argued that sensemaking within the organization and change context is essential in communication, but professional discourse and culture are also important to take into consideration. Furthermore, the intentional context referring to individual and psychological aspects are most relevant. However, the main focuses in this study is on the interaction level between participants, and analysis organization change from a linguistic perspective (see also Section 3.4). Based on the two schools concerning language assumptions, this study proposes a self-constructed conversational communication model which is depicted in Figure 3.2.
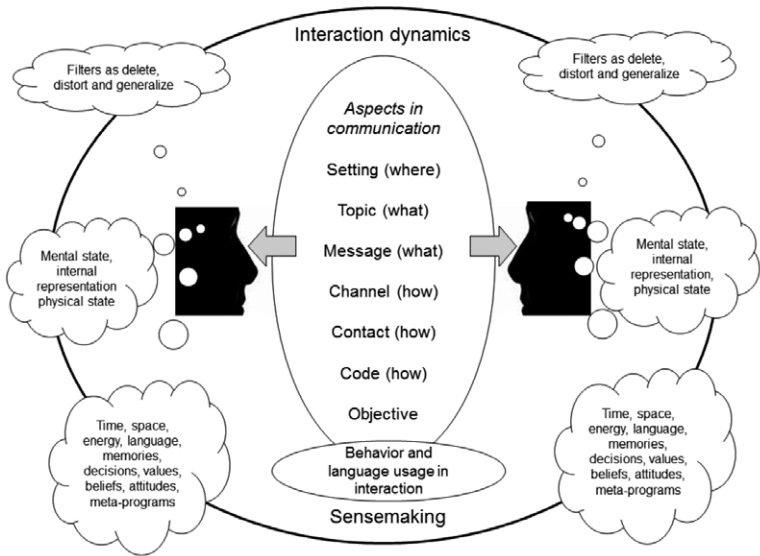
Figure 3.2 The conversational communication model

This model combines the communication aspects (i.e., setting, topic, message, channel, contact, code and objective) mentioned by Ulijn and Strother (1995) with intra-psychological[5] (i.e., filters, internal representation, mental and physical state, beliefs and attitudes) aspects in order to understand what is important during a conversation. Furthermore this model suggest by presenting two people in a circle that sensemaking is actually a dynamic and interactional process which takes place when the people meet. The self will be constituted in the interaction with the other.

The intra-psychological aspects shown in Figure 3.2 are well known in neurolinguistics or studies regarding language-brain relationship. Filters are used as a selection criteria (i.e., delete, distort and generalize) and based upon our reference framework (i.e., memories, values, beliefs, attitudes). Both the filters and reference framework depend on the physiological and mental state of the individual. This study acknowledges the importance of these individualistic psychological aspects, but as mentioned before the focus is on the interaction level rather than on the individual intra-psychological level. Nevertheless, it can be assumed that professional discourse and culture might be influenced by the reference framework of the individual professional combined with the organizational and change context in which the professional works. However, this is out of scope in this study.

Figure 3.2 might fit within the conversational school, and introduces many elements that influence the sensemaking processes, which the representational sender – receiver model omits. In addition this study focuses on the local interactions instead of on individual psychological aspects. In the suggested conversational communication model, language must be seen as a 'tool to construct' shared meanings – and at the same time shared meanings that are considered important words or concepts develop – which represents the actual communication process between participants.

The following section describes how interactions between participants in conversations can develop. Again, we present two different practices that fit within the two change and two language schools described earlier.

3.3 The importance of discourse in interaction

Studies in organizational development pointed out the importance of dialogue in organizational change (Tietze, Cohen and Musson, 2003; Grant, Hardy, Oswick and Putnam, 2004). To use language is to engage in a social process of constructing particular realities (Kirk, 1986). This is in line with the theoretical perspective of this study and fits within the conversational communication model. The previous section indicates that interaction between the professionals is crucial, but the question can be posed as to how that interaction process actually works when interacting and how it develops over time in change programs. This section describes the terms monological and dialogical (Linell, 2009) communication in relationship to the representational and conversational schools as discussed in the previous section.

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5   This study does not focus on the intra-psychological elements, which are often implicit and not outspoken, by the different professionals but it is a well-known fact that personality differences manifest themselves in language use (Fast and Funder, 2008; Pennebaker and King, 1999). Other studies (Beukeboom, Tanis and Vermeulen, 2012) show the relationship between extraverts and their abstract language usage while introverts have a more concrete language use. These personality traits might be important to understand conversations between different professionals better, but this study has not investigated the psychological traits of individuals.

When different professionals (i.e., the service engineer, manager and consultant) participate in a conversation (i.e., a project meeting) in order to cooperate in a change program, they first might assume that certain words, concepts or assumptions used in their own professional discourse will be equally understood (i.e., have the same meaning) by the other professionals. In fact, the professional might think in the representational perspective by assuming that signifier and signified are fixed and that mutual understanding is easy. However, field observations show that sometimes the different professionals had completely different understandings about these fixed concepts. This phenomenon cannot be explained by the representational theory because there signifier and signified are supposed to be clear, thus another conversational theory is needed to explain what is happening and to truly investigate the effect of different discourse styles in interaction. Therefore, this study has chosen to adapt the conversational communication model instead of the representational model in order to answer the main research question.

Nevertheless, when the participants are interacting this might occur in two different theoretical ways. Linell (2009) makes a clear distinction between monological and dialogical conversations. First, monologism is based on three, rather linear underpinning assumptions; 1) the information processing model, 2) the transfer model of communication (i.e., the sender – receiver model) and 3) the code model of language (i.e., static signs and fixed meanings). In a monological conversation everyone participating in the interaction keeps sending by using their own assumptions about the meaning of the terms expressed, and 'stay on their own meaning-island', assuming that they understand each other, which in fact is not the case. In this perspective utterances are made by senders (i.e., change agents) and receivers (i.e., change objects) who process information in their own 'coded' language. This can eventually lead to confusion among the participants. It might be that within a strictly planned change approach the change agents are sending their message expecting change objects to receive that message and start behaving accordingly.

Second, dialogical communication highlights the role of interaction and contexts, as well as language and the contribution of the other (Linell, 2009). In essence 'dialogicallity' is about humans, interdependent with others' experiences, actions, thoughts and utterances; a person is not an autonomous individual who can decide everything for him or herself. This 'dialogicallity' is represented in the conversational communication model presented in Figure 3.2. In this type of conversation, the participants are assumed to be willing to listen and to investigate what the other person actually means with certain words, concepts or ideas. In dialogical conversations it is possible that important concepts receive a local or situated interpretation that is understandable, clear and workable for the participants.

An important condition for convergence of meaning is the ability of people to reflect on their own and the other parties' discourses, so that they can adjust their language in response to its effects on the other parties. Characteristic of professional communities is their collective use of a specific set of discourses, concepts, analytic reasoning styles and tropes. Moreover, the loyalty of professionals is typically geared towards their own colleagues who speak the same language and have a similar mindset. This loyalty will cause professionals to orient themselves primarily with regard to the discourse and language of their fellows, instead of the members of other professional communities. The dynamics of not understanding each other's thoughts and discursive worlds can cause cooperative change efforts to break down, ending in frustrated professionals who refuse to take the interests of others seriously.

This study assumes the conversational model and the dialogical conversation practice useful, knowing that sensemaking is a social and interactive process between humans, and that organization, change, and intentional contexts are influencing factors. In this study we will use the term monologic, meaning the representational school and sender – receiver model, whereas the term dialogical represents the conversational school and the conversational communication model. It is assumed that the three professional groups studied might have their own typical professional discourses, which implicitly might lead to monologism when interacting, and thus affect the interactions and sensemaking processes during the organizational change process.

The following section discusses the various definitions of discourse and discourse levels, which can be viewed at the societal, organizational, and group level.

3.4 Discourse definitions and levels

In the previous sections the term 'language use' was used to express the words and sentences participants use in their conversations. The language usage or an utterance is the speech act from one person belonging to a certain professional group, but in the interaction with another professional, belonging to another group, both use the typical language they are familiar with. This is where the professional discourses come into place. Professional discourse can be understood as patterns of usage of language within the particular professional group. In this sense 'discourse' incorporates the individual 'languages' and as Kirk (1986) states, "discourse is larger than language, because it embraces all forms of communicating rather than simply the verbal or written word. It refers to all meaning making activity, whether this is intentional, conscious, unconscious, explicit, tacit or reflexive." Language is central in the processes of shaping and influencing essential elements in change processes. In addition, this study uses discourse analysis (see Chapter 4) which allows the researcher to take a close look at the conversation structure and what it might tell about the participants interacting in the conversation (O'Grady, Archibald and Katamba, 2011) thus, going beyond the individualistic language usage. Therefore, this study uses the term 'language' when talking about individuals, while the term 'discourse' refers to a group. In the next part, the focus will be on definitions and levels of discourse as found in the literature, and which are relevant to this study.

Definitions and levels of discourse
There are many different definitions of discourse. The strict definition of discourse limits it to spoken dialogue, but a broader definition of discourse includes all forms of spoken interaction and written texts of all kind. However, organizational discourse is poorly defined (Grant, Keenoy and Oswick, 1998). Table 3.1 shows different definitions and interpretations of discourse from a generic, to a specific description. On the generic level 'discourse' can be seen for instance within a community or a national culture. The next, more detailed level refers to organizations and it can be applied, for instance to the organization culture. The most detailed level is that of professional discourse and it is closely related to the professional culture which is most relevant for this study.

Most authors in Table 3.1 take both written and oral language into consideration (i.e., the broader definition of discourse). Commonalities between these definitions are also the active use of discourse. These authors also refer, though in other terms, to the hybrid discourse (Thomas, 2003), specific discourse of communities (Pogner, 2005), a range of disciplines (Marshak and Grant, 2008),

and professionals with the same or different expertise (Gunnarsson, 2009). In their descriptions all authors underpin that discourses have strong relations with the professional background of employees and specific groups. For this study the definition of discourse given by Phillips et. al., (2004) and Hall (2001) seems to be most applicable because they see discourse as "rules that in a certain way influences talking about a topic, defining acceptable and intelligible ways of talk, writing or conducting oneself. Furthermore it also rules out, limits and restricts other ways of talking, or conducting ourselves in relation to a topic or constructing knowledge about it" (See Table 3.1). This definition fits within the discourse analysis performed in this study.

Table 3.1 Different perspectives and descriptions of discourse

Author	Definition of Discourse
Phillips, Lawrence and Hardy (2004) Generic discourse	In general, discourse refers to practices of writing and talking. Parker's (1992) definition of discourse is "a system of statements which constructs an object". Discourse "rules in certain ways of talking about a topic, defining an acceptable and intelligible way of talk, writing or conducing oneself and it also rules out, limits and restricts other ways of talking, of conducting ourselves in relation to a topic or constructing knowledge about it" (Hall, 2001). Discourses do not just describe things; they do things (Potter and Wetherell, 1987). See also speech act theory of Austin and Searle.
Burr (1995: 51) Generic discourse	"…anything that can be 'read' for meaning…(that) can be referred to as text."
Marshak and Grant (2008) Organizational discourse	In organizational studies the term organizational discourse connotes an eclectic variety of perspectives based on a range of disciplines where the central focus is the role of language and discursively mediated experience in organizations. These can be spoken or written or take the form of other more abstract types of media.
Gunnarsson (2009) Professional discourse	Covering text and talk – and the entwinement of these modalities – in professional contexts and for professional purposes. This means that professional discourse includes written texts produced by professionals and intended for other professionals with the same or different expertise, for semi-professionals.
Pogner (2005) Professional discourse	Discourse communities are characterized by the mutual dependence of language usage and membership in the community. Discourse emphasizes that the [professional] group shares more than a particular native tongue.
Thomas (2003) Management discourse	Management discourse unfolds across a complex network of social institutions and relationships that are changing continually. Three main conjunctures are: the management academia, the management consultancy and the management practice. This leads to a hybrid discourse and interplay of academic, consultant and practitioner discourses.

Table 3.1 points out that discourse is not a one-dimensional and clearly defined construct and in addition Grant and Marshak (2011) developed a framework in which they describe different levels of discourse. According to Grant and Marshak (2011) the core premise of change is that basic assumptions about organizing and organizational change are created, sustained, and over time transformed through discourse (Barrett, Thomas and Hocevar, 1995). Table 3.2 gives an overview and short description of the five different levels of dicsourse (Grant and Marshak, 2011). This is important for this study when deciding on which level discourse analysis should be performed. Given the main research question, it seems to be appropriate to investigate primarily the meso (i.e., discourse, group, interactional conversations) level, and to some extent the macro (organizational) and micro (i.e., language, speech acts of individuals) level (see Chapter 4).

Table 3.2 Levels of discourse (based on Grant and Marshak, 2011)

Level	Description of Different Levels of Discourse
Meta level (societal)	Discourses that are recognized and espoused at the broader societal level across institutions domains. More or less standard ways of referring to / constituting a certain type of phenomenon (Alvesson and Karreman, 2000)
Macro level (organizational)	Discourses as an aggregation and accumulation of discursive interactions in organizations. Here, interactions such as conversations and texts coalesce to form the dominant thinking, institutional practices and collective social perspectives within organizations
Meso level (group)	Discourse to explore the interpersonal conversations such as talk-in-interaction which shapes social order in everyday organizational life. At this level discursive interactions will impact on the actions and behavior of individuals within a localized context (e.g., departments, groups).
Micro level (individual)	This level focuses on the detail of language in use by individuals and might gain insight into attitudes, affiliations, orientations, motives and values of a given organizational stakeholder (e.g., employee, customer, manager).
Intra-psychic (individual – psychological)	At the lowest level discourse might manifest itself in the form of internalized stories and introjected beliefs that an individual conveys to him or herself. It also refers to cognitive frames (e.g., core beliefs and assumptions)

Philips, Lawrence and Hardy (2004: 645) describe the use of a discourse analytic framework to understand how organizations are produced and maintained. They mention the accounting discourse which are for instance "clear rules about such issues as what goes on a balance sheet, how auditing is carried out, and how particular costs are calculated." To extend this line of reasoning, it is assumed that there also can be engineering discourses, management discourses, and consulting discourses. It then becomes relevant to investigate questions as: What does it mean when these different professional discourses and cultures interact in organization wide change projects? Is there

a kind of bias between the different professional discourses which might lead to misunderstanding on the subtle elements of communication (e.g., implicitly assuming that the relationship between the signifier and signified are known)? The next section discusses the literature concerning the professional discourse and culture of (service) engineers.

3.5 Characteristics of three professional groups

Discussing professional discourse also concerns the speech act theory which was developed by Searle (1983 and 1992). Searle introduced the term 'background' or 'the network' which is a set of abilities, capacities, tendencies and dispositions that people possess. As described earlier in Chapter 1 and 2, each participant has his own intentions (i.e., the intentional context). Without exactly spelling out who you are, given your background, people might immediately understand your intentions because of your typical speech acts. Within a peer group these meanings are more easily understood, even when the colleagues use a myriad of professional terms without being explicit about them. This professional discourse is often not strictly outspoken or even considered to be an influential factor on the change process (see Bechky, 2003; Witman, 2008). Participants simply deal with the situation by discussing issues and trying to solve their problems.

Professional discourses differ depending on the professional background, assumptions and characteristics related to the profession of the participants (i.e., engineers, managers and consultants). Next, relevant for this study, assumptions and characteristics found in the literature of the engineering, managing and consulting professions are described as generizable typologies. This might give some insight in the PC of the three groups researched, which will be explored later in this section.

Assumptions and characteristics[6] about engineering
The ideal engineering world is one of machines and processes working perfectly without human intervention. Problems are stimulating and can be solved by linear, cause and effect, quantitative thinking (Schein, 2004). Engineers are inclined to place much emphasis on facts and proof (Finniston, 1980; Souder, 1988) and to make (in)appropriate use of their technical background in order to solve problems and apply their innovative abilities to engineering, rather than to managerial issues. The engineers also have a great professional pride and high ethical values. They are often uninterested in management issues that are seen as an diversion from engineering work, place an emphasis on tasks, but not on relationships, they are not risk takers, and they do not like to make decisions based on incomplete data (Beck, 1988). Engineers even seem to have difficulty to adapt to organizational change (Leonardi et. al., 2005). In many instances they do not worry about or underestimate the costs and have no sense of time (Beck, 1988; Ulijn et. al., 2001), lack personal skills such as verbal and written communication, teamwork, management, and leadership skills (Beck, 1988; Ulijn and Strother, 1995; Sales, 2006).

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6   This summary should not be regarded as a negative characterization of engineers. It is not the assumption in this study to mention that engineers have these negative characteristics or often mentioned stereotypes by others. The reason to mention this is our claim that these characteristics might become explicit in the professional discourse of engineers and thus reflect in their cooperation with other professionals, such as in a change program.

Assumptions and characteristics about managing
Managers focus on financial survival which is equivalent to a perpetual war with one's competitors. The economic environment is competitive and potentially hostile. Managers see the organization as a team, but accountability has to be individual (Van Nistelrooij, de Caluwé and Schouten, 2007). Some idealized characteristics of managers are; having a helicopter view, appropriate analysis skills, imagination and creativity, sense of reality, and leadership skills (Trompenaars and Hampden-Turner, 1999; Chia, 2005). At the same time assumptions about managing are related to 'being in control', although in many situations in which management seems to be not in control they tend to hold to that idea firmly (Ardon, 2009). Other characteristics about managing include element such as goal driven, desire to gain results, decisiveness, hit and run, planning, scheduling, and focus on day-to-day practice (see Koot and Sabelis, 2000 in Ardon, 2009).

Assumptions and characteristics about consulting
Consultancy work is an ongoing effort in which the client has to be convinced about the usefulness and contribution of the consultant (Van Nistelrooij et. al., 2007). Their social skills and personality are important and seem to be an integral part of a consultant's professional competence (Legge, 2002). Some characteristics of consultants are: having a strong expert/process knowledge with respect for situation/persons, sensitivity and equality in conversation (involved/emphatic), structured and well-organized, taking a firm position, charming, friendly and calm (Reitsma and de Caluwé, 2009). Consultants need analytical, networking and listening skills, a certain tolerance for ambiguity, a high level of integrity, courage and negotiation skills, being self-starting, empathic and authentic, and the skill to establish trust with clients (Greiner and Ennsfelliner, 2010).

The assumptions and characteristics of the three professional groups described might be indicative for their typical professional culture, and can be related to their different professional background, and inherently to the socialization process with peers (see Sales, 2006; Kunda, 2006; Parker, 2000). In this respect, Plum et al., (2008) mentions the specific cultural intelligence that might be developed within mixed groups of workers with their own specific professional discourse. Within these multi-functional groups mutual understanding and collective sensemaking can be necessary for becoming and remaining aligned. It is assumed that in these situations there is a possible need to have conversations in which the assumptions, beliefs and thoughts, often hidden under the surface, are brought into the conversation making them explicit. Researchers (e.g., Leonardi, 2001; Hall, 2005) also recognize a common engineering culture, communication, and inter-professional teamwork, in which the engineering culture is expressed through their discourse and behavior. Next, Section 3.6 will describe the professional discourse and culture of the engineering profession.

3.6 Professional discourse and culture of engineers

This section will describe the professional culture of engineers[7] and their professionalism. As the oldest organized profession in modern organization, with a long and difficult education and training, which emphasizes problem solving, working towards finding the right solution and paying attention to detail, engineers have the ability to think conceptually and in terms of systems. Moreover, they believe in the law of physics, and have respect for technology, computations,

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7   In Section 3.6 we mainly described the engineering discourse and its specific characteristics. However, we do realize that this is a generalization which cannot be applied to each and every engineer. Within each profession, there are always individuals who display different characteristics and who employ other language usage.

materials and design (Harris, Moran and Moran, 2004; Shaw and Shaw, 1998; Ulijn and Fayolle, 2004). Engineering is embedded in a social system that consists of shared values and norms, with its own special jargon and humor, status and prestige ordering, and differentiation of members from non-members. In short, it is a profession with a longstanding professional culture.

Professionalism
Leicht and Fennell (1997) carried out a study in order to stimulate a sociological interest in professional work which provides an avenue for studying the diversification of professionals and work settings. This theorizing study found that professional careers are institutionalized by defining what is 'typical' and how 'distinguished' professional careers appear. An important conclusion of this study is that organizational changes can be seen as something which might be potentially threatening to one's professional autonomy. However, hardly any research has examined whether these changes affect the content of professional work and/or the context in which it is performed. Leicht and Fennel (1997) concluded that it is difficult to determine what the professional culture of an engineer precisely is, nevertheless the characterizations showed that there are many assumptions about the engineering, management and consultancy professions which are useful to this study. Figure 3.3 shows a typical example of one of the stereotypes depicting service engineers by characterizing their professionalism.
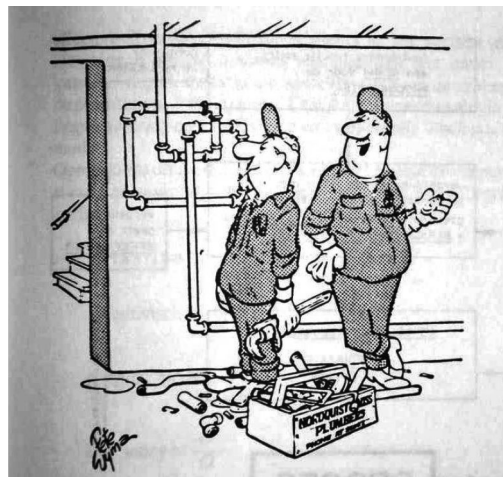
"Good job, Janssen! It doesn't leak anymore, it shows craftsmanship and it took a lot of time… That's the way I like it."

Figure 3.3 'The engineer and his professional culture' (adapted from in 't Veld, 1988)

Wanrooij (2001) and Weggeman (2007) state five explicit aspects of a professional; 1) professionals perform specialized work often after a certain period of specialization, 2) professionals like to work autonomously, 3) they are highly attached to their peers and have memberships with related groups, 4) the financial focus of an organization does not have a high priority in the professionals' opinion, and 5) the professional has a strong focus on his job and feels highly involved in performing that job in the best possible way. Lang (1993) mentions cultural factors of different

professionals based on negotiation skills, which is often the situation in organization change (see Chapter 8). Al together, this leads to a strong development of the professionals' habitus within a professional field, which will be explained briefly when looking at the work of Bourdieu.

In the macro sociological theory of Bourdieu the concepts of field and habitus are important to understand. Different fields are for instance art, religion, science, education, technology, economics, and politics, hence implying that there is a specific logic and belief held among the participants in that field. The habitus provides the practical skills and dispositions necessary to work within the specific field by guiding the choices and decisions of the individual without always looking for strict procedures or formal rules. The habitus reflects a mental and cognitive structure used to deal with daily functioning and work by using internalized schemes to define, interpret, evaluate and judge situations. We can consider this as a professional culture and related professional discourse.

For the service engineers this implies that their field is within engineering and that their habitus is developed in their younger years, (i.e., technical education; working careers) leading to certain engineering habitus, which eventually become an engineering culture with an accompanied engineering discourse. These educational experiences and the socialization process reinforce the common values, problem solving approaches and typical language usage in each profession (see also Hall, 2005 related to the medical professions). This habitus generates in some way common sense behavior which is positively rated in the particular field (Witman, 2008).

To conclude, an engineer who belongs to the profession of engineering can be defined as a person who has the ability to behave according to the rules of the 'engineering-game' and who is an inhabitant or insider in the field of engineering. Without this professionalism, the person would be an outsider.

Professional culture
The concept of culture is extensively studied from various different angles and on different levels. Most well-known is the National Culture (NC) level described by Hofstede (1980). To some extent we can follow Hofstede et. al., (2010) when he describes culture as the 'software of the mind.' However, the study of Hofstede was especially related to National Cultures (NC) and cannot be used for defining PC unconditionally. Furthermore, his work is also criticized for the "mechanical concept of internalization" underlying Hofstede's assumption that "cultures are programmed into" in early childhood (McSweeney, 2002: 98). Nevertheless, we think that people are partly shaped in and being shaped by the environment in which they grow up.

More appropriate might be the definition given by Schein (2004) defining Organization Culture (OC) as a pattern of shared values, basic assumptions, that are learned by the group members in their daily practice to solve problems that has worked well enough, and therefore can be thought to new members as the correct way to perceive, think and act. The Professional Culture can be seen as a third level within NC and OC. We assume that the definition posed by Schein is useful to keep in mind while further exploring Professional Culture (PC).

Professional cultures develop through the socialization that individuals receive during their occupational education and training (Hofstede, 2001; Jenniskens, Ulijn and Tywuschik, 2011). In addition the national and organizational culture determine what differences can occur in the

discourse and language of the professional (Grant and Marshak, 2011). The OC comes into place when the professional is an employee and his PC is already developed in his professional education. This might explain why employees are more loyal to their profession instead of to the organizational culture where they work as found in a study by Wever (1990).

Figure 3.4 shows the different cultural levels and the place of socializations, and the gradual shift from values learned within ones' national culture towards learned and experienced practices at school and in the workplace. Of course the levels are not very strict, but influence each other.

	Level		Place of socialization
National Culture	Nation	Values	Family
Professional Culture	Social Class / Occupation / Industry		School
Organizational Culture	Organization	Practices	Workplace

Figure 3.4 Levels of culture and place of socialization (Hofstede, 2001)

Von Meier (1999) states that different mental models or thought worlds belong to the different professions. In this respect, PC is closely related to the terms field and habitus which was discussed earlier. It can be assumed that professionalism, professional discourse and professional culture are all intertwined concepts that come into play when the different professionals interact within an organizational context in change programs.

Choosing a model to interpret organizational culture and position the three cases
Organizational change is a complicated and diverse mix of elements related to the organizational and change context, and the professional cultures and discourses of the interacting participants. In order to compare and position the three cases of this study and to find out how the contextual factors mentioned above influence the interaction between different professionals, and how they affect the change result, it is useful to have a relevant model that combines these factors of effect.

Buelens and Devos (in Boonstra, 2004: 86) describe a model to understand the organizations' change environment and the strategies that might be useful in that particular context. They start with 'values' (i.e., use of influence, interests) and 'facts' (i.e., the economic rationality managerial logic), which are used in all kind of decision making. The 'values' are then related to power distance because of the influencing and negotiating that takes place in change processes. There is a situation of high power distance when the change agent has a "much stronger power base" than the change object. This definition is similar to the description by Hofstede's Power Distance Index (PDI) when power is distributed unequally, which is expected and accepted by less powerful members in the same context. The other dimension, relating to 'facts' is uncertainty, because a lack of information about the unknown future regarding the change process will bring uncertainty, which has to be

rationally understood. This is comparable with Hofstede's Uncertainty Avoidance Index (UAI) when people have to deal with ambiguity. The two dimensions combined leads to a matrix with four possible change environments; 1) professional (low UAI and PDI), 2) traditional (low UAI and high PDI), 3) high-pressure (high UAI, and high PDI), and 4) experimental (high UAI and low PDI).

Another framework developed by Ulijn and Weggeman (2001) combines National Culture (NC) and Organizational Culture (OC), and is based upon the work of Hofstede et al., (1990), Schneider and Barsoux, (1997), and Trompenaars and Hampden-Turner, (1999). This framework combines two other dimensions, namely; 1) task – person oriented and 2) hierarchical – egalitarian oriented, which are OC related dimensions. In addition this framework makes a combination with the UAI and PDI scales of Hofstede et al., (1990). In that sense these models are not completely comparable although both of them use Hofstede's dimensions. This study focuses on PC, but the OC as its element is seen as an organization contextual factor that influences the interaction dynamics between the participants involved in the organizational change processes. It seems that this model combines the 'power' and 'uncertainty' dimension of the model of Buelens and Devos (in Boonstra, 2004) with dimensions related to OC, which seems applicable in this study.

However, when taking OC into account also the competing values model of Cameron and Quinn (2006) can be considered. In their model two axes form a two by two matrix; 1) internal – external focus, and 2) flexibility – control leading to four types of organization culture; 1) hierarchy (internal and stable), 2) clan (internal and flexible), 3) market (external and control), and 4) adhocracy (external and flexible). These two dimensions are slightly different compared to the model of Ulijn and Weggeman (2001). Furthermore, the model does not take PDI and UAI into account, which are relevant in change processes. The focus on internal or external aspects are considered less useful for this study because of the focus on the interaction dynamics of professionals. Next, TI and SI are considered drivers for change, and are not included in the models discussed above, whereas in the model of Ulijn and Weggeman (2001) (see Figure 3.5) the relation between innovation (TI and SI) and organization culture are explicitly taken into account. That is why we choose the adapted model of Ulijn and Weggeman over the ones by Buelens and Devos (in Boonstra, 2004) and Cameron and Quinn (2006), which do not account for innovation as one of the main drivers of organizational change.
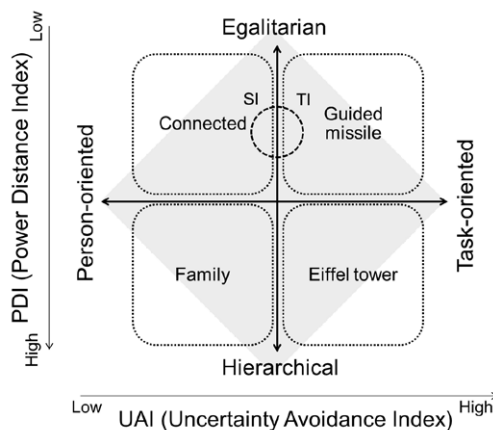
Figure 3.5 Organization cultures and settings (adapted from Ulijn and Weggeman, 2001)

Figure 3.5 presented the model that will be used to position the three cases (Chapter 5, 6 and 7), and in Chapter 8 we use the same model to analyze across the three cases. Trompenaars and Hampden-Turner (1999) originally mentioned one of the corporate cultures in their model the incubator instead of the connected (island) culture. The name was replaced in this study because it better reflected the organization culture of Case 3. Below, the four different organization cultures are described briefly.

The guided missile
The central principle in this organization is effectiveness. The teams in the organization are important, sharing a similar goal and knowledge base that guides the organization. The teams have power and their cohesion is strong. When problems are solved by the team, the authority increases. The organization is mostly project oriented and very effective for the implementation of a technical innovation.

The Eiffel tower
The guiding principle in this organization is efficiency and cost reductions. Power is attributed to the formal position of the person, and cohesion is common in the 'boss – employee' relation. Employees are used to work according strict rules and procedures. The organization is primarily role oriented, and according to Ulijn and Weggeman (2001) not so effective for innovation, whatsoever.

The Family
Most family cultures are based on harmony, although the leader (e.g., the founder) is often a powerful personality who creates trust and empathy for the necessary cohesion in the organization. The founder is often a respected person which also increases social pressure on employees and family members. The family culture is power oriented, and according to Ulijn and Weggeman (2001) less effective for innovation, maybe more social then technical, however.

The Connected island
This organization culture is known as the incubator and focuses on the initiation of innovation, excellence, and new ideas. In this organization it is possible to create ideas, develop new ways of working, and innovate. Cohesion among employees arises when they are working on new ideas together and cross-functional groups focus on fulfillment of the organization's purpose.

We decide to position the three cases in Figure 3.5 relate to the organizational and change context as observed and found in the answers given by the interviewees during the semi structured interviews (see Chapter 4 for the items used in the semi-structured interviews). Most important were the organizational structure (e.g., managerial levels) and the communication structure during the change process (e.g., formal and using project documents).

In this study professional discourse and culture are intertwinned, and researched within the organization and change contexts of three cases. In order to answer the main question of this study a theoretical linguistic framework is needed to analyze the different discourses. Chapter 4 will describe in more detail the discourse analysis (DA) framework used in this study.

3.7 Towards a linguistic framework

The different perspectives on workplace conversations adapted by Woodilla in Grant et al., (1998: 31) suggest that within organizations, socially constructed meaning is created in language-based interactions (Berger and Luckmann, 1966) with conversations being the most commonly taken for granted practice. Figure 3.6 shows three dominant streams that can be recognized in the literature of discourse analysis: first, the conversation analysis (left), second, the pragmatic linguistics (center) and third, the critical language theory (right). In the change processes studied, mutual understanding is crucial to realize successful change. In particular, the speech acts uttered by different professionals and the meaning of words or sentences depends greatly on the situation, the participants and the social relationships. The interaction that takes place between participants and how they derive meaning from this is crucial in change processes. The pragmatic linguistics studies the ways in which contexts contributes to mening and sensemaking. It encompasses talk in intercation and studies how the transmission of meaning depends not only on structural and linguistic knowledge (e.g., grammar and lexicon) of the speaker and listener, but also on the context of the utterance, any pre-existing knowledge about those involved, and the inferred intent of the speaker (Shaozhong Liu, 2014). This implies that for this study the pragmatic linguistics approach is useful as a basis to develop the discourse analysis framework. Figure 3.6 shows in the center the pragmatic linguistic stream.
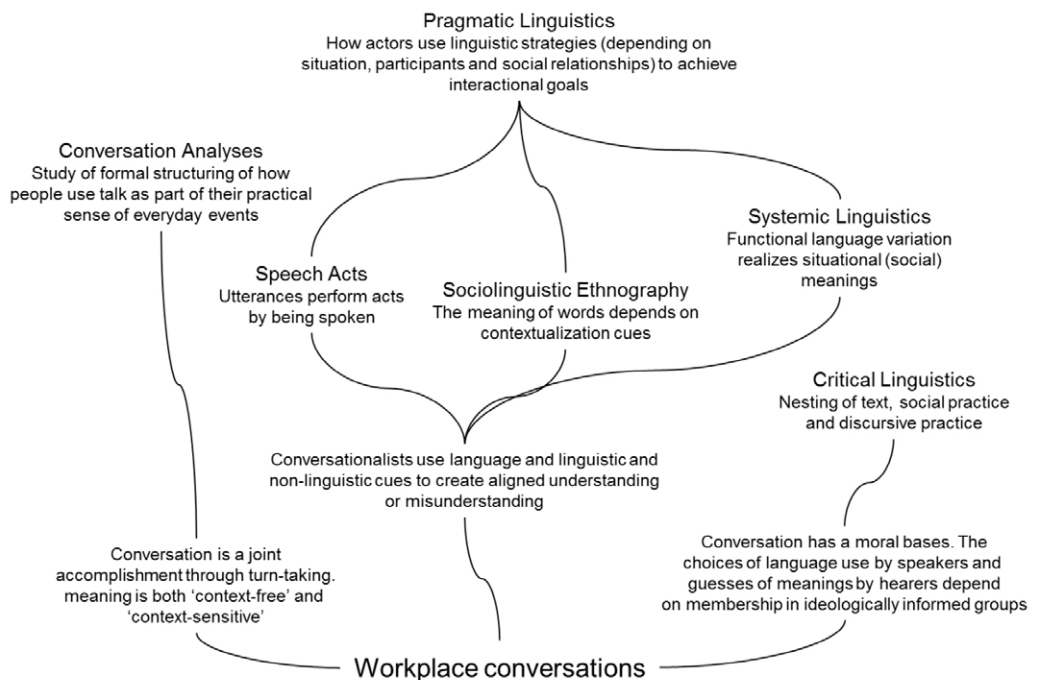
Figure 3.6 Different perspectives on workplace conversations (in Grant et al., 1998)

The pragmatic linguistics (Grant et al., 1998) research is conducted on the way actors use linguistic strategies, within a specific (organizational and change) context, and through the participants and their social relationships in order to achieve their goals. This contextualism implies that the situation in which the professionals interact is always the result of their sensemaking and discourses. Linell (2009: 16) argues that it is impossible to make sense of a part of discourse without knowing its relevant contexts. At the same time, "these contexts would not be what they are in absence of the (particular) discourse(s) that take(s) place within them." This suggest that it is useful when the organizational and change contexts are taken into account.

For understanding the interaction dynamics of professionals, it is necessary to know three different conversational aspects. First, is it possible to analyze the individual language usage of the different professionals in order to say something about their professional discourse. Second, is it possible to analyze negotiation strategies (i.e., related to power) and communicative support of the different professionals? Third, is it possible to analyze progress during an conversation? To answer these questions, this study draws on the following literature; 1) speech acts (Searle, 1983; Ford and Ford, 1995; Quinn and Dutton, 2005), 2) negotiation strategies, 3) communicative support (Ulijn and Strother, 1995) and 4) conversation phases (Ford and Ford, 1995), which are all included in the field of pragmatic linguistics and form the discourse analysis framework of this study (see Chapter 4).

Speech acts
The essence of the speech act is that uttering certain sentences and/or words can generate an action and that these sentences/words can be categorized according a typology developed by Searle (1983). In speech act analysis, research not only concerns itself with the form of the utterance, but it also is interested in finding out what it is taking place during the interaction. Lincke (2003: 83) mentions that "the type of speech act performed by particular words often depends on the speaker's intention and the context in which the words are used", possibly indicating the professional discourse of the group.

Building on the work of Searle (1983), Ford and Ford (1995) argued that within a change context it is possible to use various combinations of five type of speech acts: 1) assertives or claims, 2) directives or requests, 3) commissives or promises, 4) expressives that convey an affective state, and 5) declarations that announce a new operational reality. Speech acts analysis might give an idea of the typical language usage of the professionals, and thereby indicate their professional discourse.

Negotiation strategy and communicative support
As described earlier change processes take place within a negotiated reality between participants which are all based on interaction and discourse. Furthermore, change processes are often related to power distribution and require communicative support to facilitate the change in the organization. Depending on the professional role (i.e., manager or employee) the negotiation strategy and/or the intensity of the communicative support might differ. This study assumes that it is important to analyze the conversations on these aspects as well. The work of Ulijn and Strother (1995) gives sufficient suggestions to accommodate this in our discourse analysis framework (see Chapter 4).

Conversation phases

Ford and Ford (1995) use the speech act categorization of Searle (1983), linking it to the dynamics of communication in change. In fact the conversations are verbal interactions between participants and the interaction can vary from a single speech act, to an extensive network of speech acts which constitute arguments (Reike and Sillars, 1984) and narratives (Fisher, 1987). According to Ford and Ford (1995) these speech acts are used in different combinations, but ideally four different phases are important in the conversation: 1) initiative phase, 2) understanding phase, 3) performance phase, and 4) closure phase. We assume this phasing might give insights into the progress of the interaction during a conversation.

As far as we know, these four different aspects of discourse analyses are not often used together in one discourse analysis (DA) framework to analyze professional discourse in change contexts. Although Grant et. al., (1998) refer mainly to spoken (oral) language and they do not refer to language this study includes written language as an important part of professional discourses. Written language is salient because in most change programs, management or project teams start a change process by writing project plans. Therefore, this study takes both the oral language (i.e., conversations) and the written language (i.e., project and organizational documents) into account.

3.8 Summary and research implications

This chapter provided the literature review of the linguistic literature. Within the linguistic literature, it was observed that in this field the use of language is investigated in-depth by examining discourses and professional discourse, but the change management literature does not take this into account. This is seen as the gap in the literature and therefore this study combines these two scientific fields. It is argued that change processes are all about social interaction between different professionals who use their typical professional discourses. With a focus on professional discourses and culture the (professional) characteristics, assumptions and the discourse of engineers, managers and consultants were described. Based on pragmatic linguistics we described four different routes to analyze discourse in order to investigate formal and informal oral and written language.

This study concludes that it is important to investigate organizational and change contexts in order to understand the organizational dynamics. It is also mentioned that in change processes people interact, discuss, reflect and make sense of what is happening around them, thus implying that it is important to know which actors are participating in the change process and how their social interaction has developed during the change process. Finally, this study pays attention to typical professional discourse and the culture of the interacting actors and how this perhaps might affect the dynamics of change processes in organizations.

To understand how professional discourse and culture affect change in organizations this study investigates a fourth research subquestion:

4. *Do cultural context factors, such as the interaction between Organizational Culture (OC) and Professional Culture (PC) affect organization change?*

This question also involves the possibility to find causes for change success or failure with the method of a discourse analysis framework, which leads to our fifth research subquestion:

5. *Can Discourse Analysis (DA) be useful to understand the organization change result?*

Finally, we ask ourselves if it is possible, using a DA method, to better understand the combination of organization and professional culture in which the organizational change process can be facilitated best. This leads to the sixth research subquestion:

6. *Can DA lead to additional insights concerning the interaction between OC and PC as to benefit Technical and Social innovation (TI and SI)?*

Chapter 4
Methodology

The main research question of this study is: *What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?* The relevant subquestions are described in Chapter 1 and derived from the literature review in Chapters 2 and 3. The six subquestions are listed below:

1. *What is the organization and change context of the three cases?*
2. W*hat is the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants?*
3. *Can a difference between Professional Culture (PC) and Professional Discourse (PD) of different professional groups be a cause of resistance to change?*
4. *Do cultural context factors, such as the interaction between Organizational Culture (OC) and Professional Culture (PC) affect organization change?*
5. *Can Discourse Analysis (DA) be useful to understand the organization change result?*
6. *Can DA lead to additional insights concerning the interaction between OC and PC as to benefit Technical and Social innovation (TI and SI)?*

This chapter gives a description of the research design, the role of literature and methodology, which is the result of an iterative process. Section 4.1 describes the research design and pays attention to the 'what' and 'how' questions in this explorative study. Section 4.2 deals with the practical process of selecting the three case studies. Section 4.3 explains the positions and roles of the participants studied, and the role of the researcher as a participant observer. Section 4.4 describes the particular role of the literature as described in Chapters 2 and 3, taking a 'in-between' grounded theory approach which can be seen as a part of the research design and methodology. Section 4.5 describes the multiple methods for qualitative and quantitative data capturing, and how the coding of the qualitative data was carried out. Section 4.6 gives a summary and provides the conclusions for this chapter.

4.1 Research design

Before choosing a research design it is necessary to describe methodological considerations that are relevant for and consistent with the contents of this study. Discourse analysis as performed in this study belongs to the exclusive domain of linguistics, but it is also used in other disciplines, such as the sociology, psychology, and anthropology. Before choosing a research methodology it goes without saying, that an overarching theoretical perspective is needed (van den Berg in de Boer and Smaling, 2011). This study focuses on dynamically and complicated organizational change situations in which interaction processes depend on the participants involved and the situation. The process model depicted in Chapter 1 shows these dynamics and implies that the focus is on all these aspects together instead of reducing this complicated situation to more a limited number of 'variables' making a variance model possible (i.e., reductionism).

The process model including the different concepts might indicate that a qualitative research design would fit this study. However, within qualitative research different scientific paradigms can be listed; 1) post-positivism, 2) constructivism, and 3) participatory paradigm (Guba and Lincoln, 2005). In their work Guba and Lincoln (2005) categorized these paradigms with regard to several issues, such as; nature of knowledge, inquirer posture, goodness of quality criteria. We draw from this framework in order to make methodological decisions for this study and determine the research design (see Table 4.1). Furthermore, it is important to understand the position of the researcher and how he perceives the world, humanity, culture, knowledge development, and his norms and values. At the same time it is recognized that the researcher's own background knowledge can also influence the methods that are chosen and the observations that will be made (Reichardt and Rallis, 1994). To explain the position of the researcher we illustrate in Table 4.1 some of the issues mentioned by Guba and Lincoln (2005), and take a look at three relevant paradigms.

Table 4.1 Position of the researcher related to the different paradigms

Issues	Post-positivism	Constructivism	Participatory
Inquirer posture	"Detached scientist"	"Passionate participant"	Self-reflective, narratives
Knowledge accumulations	Building blocks, cause and effect	Informed, reconstructions, and experience	Communities of practice
Quality criteria	Internal en external validity, reliability and objectivity	Trustworthiness and authenticity	Congruence of experiential, presentational, propositional, and practical knowing
Nature of knowledge	Non-falsified hypothesis that are probably facts or laws	Individual and collective reconstructions,	Practical knowing, critical subjectivity and living knowledge
Methodology	Falsification of hypotheses, may include qualitative methods	Hermeneutical and dialectical methods	Collaborative action inquiry, shared experiential context

Based on the researchers own position, and how he perceives the ongoing interaction dynamics in change processes the constructivist paradigm is considered appropriate for this study. Furthermore, the main research question of this study is about 'how' interaction processes between different professionals develop and 'what' is the role of professional discourse in this interaction. In addition, it is important to know 'why' these different professional discourses might affect the change process and 'what' solution might be available to solve the assumed problem. The subquestions that have been formulated are particularly 'how', 'what', and 'why' questions and they can be seen as explorative and explanatory. Referring to the process model it seems appropriate for this study to hold on to the constructivist perspective, in which the dynamically complicated situation is seen as circular, subjective, concerned with the process of change, including the interaction between participants, and descriptive. This leads towards a methodology that fits into the constructivism.

The characteristics of the research questions and the constructivist paradigm indicate that a case study design might be appropriate. Another reason for choosing a case study research design is the understanding of the phenomena under investigation and the maturity of theoretical development in the relevant scientific field. Edmondson and McManus (2007) describe two major strands as shown in Figure 4.1 and an intermediate theory which enables the possible use of 'hybrid methods.'
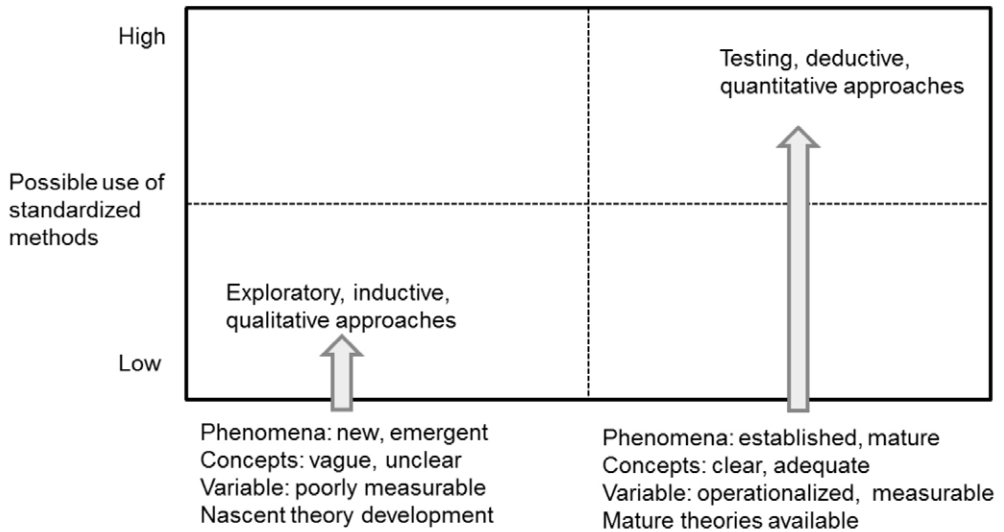
Figure 4.1 Theory development determining the research design

For this study the *phenomena* are new and emergent, the *concepts* are unclear and vague, and *variables* are poorly measurable and not operationalized. Hence, the use of standardized methods (i.e., statistical methods) is limited. This implies that in this study the explorative, inductive research design is recommended. This study is explorative and mainly qualitative because little is known about interaction processes in change projects between different professional discourses and how that might affect the change result. As a consequence, this research design leads to field research in which case studies are appropriate (Stake, 1995; Rosenberg and Yates, 2007; Yin, 2009).

Yin (2009) states that case studies are used to explain presumed causal links in real-life situations that are too complex for the survey or experiment. Organizational change programs are seen as difficult situations including many influential and contextual aspects. That is why this study takes a case study research approach, but for reasons of improving the likelihood of accurate and reliable findings, it is preferable to work with a multiple case research design.

Multiple case study and multiple methods
This study used a multiple case design which can be seen as a variant on the single case study approach within the same methodological framework (Yin, 2009). However, multiple case designs have distinct (dis)advantages compared to single-case designs. The findings from multiple cases is often more compelling, and the overall cross case analysis is therefore more robust (Herriott and Finestone, 1983 cited in Yin, 2009: 53). Multiple case design also provide the opportunity to

compare different cases, which improves the likelihood of obtaining accurate and reliable findings (Eisenhardt, 1989; Miles and Huberman, 1994). The comparability of the three case studies can be found in the three professional groups that are investigated; service engineers, managers and consultants. Furthermore, it helps to deepen understanding and explanation. This information can be used to develop more sophisticated descriptions and more powerful explanations (Miles and Huberman, 1994), but multiple case studies also require extensive resources and time.

This study follows Yin in the explaining and describing of multiple cases in order to gain the analytical benefits and explanatory power. First, the central research question is about 'how', 'what' and 'why', which are typical questions posed in case studies. Second, the case organizations studied gave little control over the change dynamics and interaction processes. Third, the focus of the study was on the interaction between professionals, their professional discourse, and the underlying professional culture within a real-life organization context. These concepts are not rigorously described in the literature. Fourth, the multiple case study was used to explain and describe real-life situations, presumably not for the purpose of finding causal links, but for seeking to find and understand dynamic relations in the interactions. The four elements mentioned above are applicable to the three cases in this study and help to explain and describe the organization and change context of the cases. Nevertheless, this study does not follow Yin completely because the prediction of outcomes assumes a causal relation between the contextual factors, the interaction dynamics, and how they affect the change result (see Chapter 2). This strict prediction is less relevant in relation with the main research question. The findings rather emerge from a mere explorative approach.

Apart from the multiple cases, in each separate case study we use identical methods (i.e., document analysis, semi structured interviews, discourse analysis, and participant observations) for the data capture, which enables us to address more complicated research questions, and to collect richer and stronger data than can be realized with a single case study alone (Yin, 2009). Ulijn (2000) poses that by collecting data from a variety of sources, triangulation is subsequently supported, which is a method that is commonly used in order to avoid a researcher's bias (Miles and Huberman, 1994). Moreover, by using both qualitative and quantitative methods, the scientific rigor of the study can be increased. Through this multi case and multi-method approach using repeated verifications of similar discourse analysis in particular, this study aims to grasp some interpretations from the case organizations studied (Mahadevan, 2012a). Chapter 8 describes a cross-case analysis in order to find commonalities and differences between the three cases.

4.2 Selection of case studies

The selection of case organizations for this study is based on the following four criteria:
1. *Change program* - the selected organizations should have a change program which is starting up or has just been started. The change program should have been going on for at least six months and preferably a year or longer. The reason for this criteria was to have the possibility to study current changes and see the results of the change program.
2. *Participants involved* - in the ongoing change program at least three different groups of professionals (service engineers, managers and internal/external consultants) must have been involved for reasons of comparability across the cases. This study focused in particular on the

(service) engineers involved in change, while at the same time they cooperated with managers and consultants. During this interaction, it is possible to find differences in the professional discourse of those professional groups and the effect on the change results.

3. *Action research and implementation* – the use of multiple methods had to be possible and results from the research should also be beneficial to the organization's change program. But, the methods to be used also had to be the same in all of the case organizations in order to reach the overall validity.

4. *Partnership* – to ensure long term monitoring of the cases both the organization and the consultancy firm should agree on a partnership for at least a year and preferably longer.

In 2008, appointments were made with more than 35 interested organizations. Out of all these organizations, 5 organizations were finally willing to participate in the study. However, one organization participated for less than a half year and another organization's change program focused on implementing a software development model and involved primarily Information Technology (IT) professionals. Therefore, both organizations could not meet the selection criteria and the study was performed within three case organizations. The entire data capture took place between June 2008 and July 2010. At the end of 2013 the stakeholders within the three cases were asked to reflect on the change result (see Chapter 5,6 and 7).

There was a combination of: 1) commercial interest from both the consultancy firm as a knowledge supplier and the customer in need of a change solution, and 2) the role of a consultant and an independent researcher who presented practical issues that possibly biased the ideal case study design because of the direct interaction with the research object. First, the customers (i.e., the case organizations) need to implement a change process influenced the methods that could be used in this study. For instance, an online questionnaire that was meant to measure the change result at two separate moments in time, was used only in case 2. In Case 3 the instrument was not suitable in the given change context, while Case 1 only agreed to a t_0 measurement. In general, it was difficult to follow a strict research design due to the many changes in the internal and external environment of the organizations during the course of this study. The commercial commitments of the organizations and the project plans agreed upon, including milestones regarding the change program, influenced the study because sometimes research activities had to fit within the organization's change program, making it difficult for the researcher to attend all meetings, take digital recordings during interactions, or speak with the persons about the change process. Nevertheless, the data gathered represents the overall organization setting of the three different cases.

Second, the double role of the researcher as a participant observer and an employed consultant who was doing his research was sometimes a cause for conflict between 1) the required objectivity of a researcher, and 2) a customer that had paid to receive advice. Nevertheless, participant observation implicitly requires an active role instead of being an passive observer. It is possible to have a variety of roles within the case organization and be allowed to actually participate in the events (Yin, 2009). In all three cases the researcher primarily acted as a researcher, but in one organization (Case 2) he worked together with two colleagues who fulfilled the consultant role. In the two (Cases 1 and 3) other organizations the consultancy role was executed by internal consultants. The main characteristics of the three organizations involved in this multiple case study are listed in Table 4.2 below.

It can be concluded that a multiple case study design fits with the explorative approach of this study. We want to give answers on 'how', 'what' and 'why' questions. An advantage of this multiple case study is that it is possible to investigate the organization setting in-depth and in close relation with the object of study instead of investigating the cases on an abstract level and a mere distance. Another positive effect is the possibility to unravel the underlying dynamics of emergent phenomena that play out over time. Limitations are the researcher bias and his involvement with the organization setting he is studying. However, the benefits of performing a multiple case study prevail over the disadvantages, which can be minimalized by following suggestions of Miles and Huberman (1994) as described earlier.

Table 4.2 Characteristics of the three case organizations

	Case 1	Case 2	Case 3
Sector	Home utilities	Aircraft maintenance	Housing associations
Organization typology (Mintzberg, 1989)	Machine bureaucracy	Adhocracy	Professional bureaucracy
Focus of change process	Implementation of an innovative ICT tool (Tablet PC) for service engineers	Implementation of a Maintenance, Repair and Overhaul System (TRAX) for aircraft maintenance employees	Change in behaviour of service engineers and area coordinators from a technical working attitude towards a customer-centred attitude
Number of employees	4,100	400 (staff) 1,250 (cabin crew)	420
Employees involved in the change program	650	220	40
% employees involved	6.3 %	7.5 %	10.5 %
Organizational structure	Decentralized (regional and departmental)	Centralized (dispersed in departments)	Centralized (dispersed in districts)
Period of study	June 2008 until June 2009	Aug 2008 until March 2009	Oct 2008 until July 2010
Evaluation change result	December 2013	December 2013 End of Project document Sep 2009	December 2013

The three cases studied share commonalities but they also display differences. The main commonality is that in each case a change process is ongoing in which service engineers, managers and consultants were involved. This provided a setting in which the assumed differences in

professional discourses could be studied. However, there were also differences regarding the contextual aspects (i.e., organizational and change) which were influential; Table 4.2 shows that, in fact, three types of organizations are studied related to the number of employees involved in the change program and the organizational structure.

4.3 Participants and roles in the case organizations

The main focal groups in this study were (service) engineers, managers and internal/external consultants who interacted with each other during organizational change processes. Their professional discourse was studied during formal and informal conversations. In Chapter 3, the characteristics and assumptions concerning these three professional groups were described, but in this section the specific positions and roles of the participants in the change process and relevant for this study (including the researcher) are described, starting with the (service) engineer, followed by the manager and the consultant. Finally, the role of the researcher as a participant observer in the research process is reflected upon.

The engineer
The engineer in the case organizations relates to both a professional role/function (i.e., the engineer) and an employment category within an organization (i.e., the engineering department) which also can overlap (Kunda, 2006). Most of the engineers who were studied are graduates of engineering schools (secondary and higher educational levels) and can be described as people who have affinity with technology (Kunda, 2006). The engineers in the three cases can be categorized into two different sub-categories which are mainly determined by the organizational structure of the organization and their work location.
1. Engineers who deliver services in the field and who work outdoors in a mobile field office and therefore work at a distance from the managerial or change management group; the outdoors service engineers worked in Case 1 and 3.
2. Engineers who deliver maintenance and support in a workshop on site and who therefore work at a close distance to the managerial or change management; the indoors service engineers worked in Case 2.

For the outdoors service engineers one of the favorite task characteristics that particularly is included with the job is the freedom that they perceive in their work. Most of the time their car serves as their castle and they perform their tasks in isolation, so they seem to feel intrinsically responsible and motivated. For the indoors service engineers this is less interesting, however, if they work in evening and night shifts this feeling of freedom also can be experienced in their work.

The manager
The role of manager can be divided into two categories.
1. Line managers, who are responsible for a team, department or unit from their hierarchical and formal position. They are in charge of the employees and have the authority to make decisions in order to get the work done.
2. Project managers, who are also responsible for a (project)team, but usually they do not have the hierarchical position and authority to decide what employees within their teams must do, especially when a team member is also working for another line manager (i.e., the matrix organization).

Within the Cases 1 and 2, both the roles of line manager and project manager were observed when they interacted. The line managers then fulfilled their hierarchical roles while the project managers fulfill their roles as project leaders. In most situations the line managers had a hierarchical relationship with the (service) engineers. In Case 3 only line managers were involved and no project managers were appointed to guide the change process.

The consultant
In this study the role of the consultant can also be divided into two categories.
1. Internal consultants, who are on the payroll of the case organization studied.
2. External consultants, who are hired for a fee, working in an advisory role, and who are usually not accountable for the outcome of their consulting work.

In the Home Utilities Company (Case 1) and Housing association (Case 3), internal consultants facilitated the process. In the first case they did this as members of the project team and in the third case, they acted only as facilitators who organized the meetings. In both these cases the researcher was an participant observer working primarily as a researcher according the agreed partnership as described earlier. The aircraft maintenance company (Case 2) worked with two part-time external consultants, and this did not include the researcher. However, in Case 2 the researcher worked for the same consultancy firm, which made it possible to speak with the two external consultants as colleagues and making it also possible to participate more actively in the steps which were to be taken during the change project. This dual role of researcher and external consultant and the possible bias is described in the following part.

The Insider-Outsider role of the researcher
The role of the researcher as participant observer needs special attention in this study. Maykut and Morehouse (1994) state that the researcher's perspective is paradoxical; on the one hand the position of an active participant observer enables the researcher to become a part of the case, really experience and understand meanings of those studied, but on the other hand being aware of one's own biases and preconceptions when trying to understand to topic investigated. In this study the researcher had an indirect and more passive role regarding the advice (i.e., consulting), and an active role in data capture and analysis. Reed and Procter (1995) have described the researcher's relationship with the research area and suggest that the researcher occupies one of three positions: 1) outsider, 2) hybrid or 3) insider. The researcher in this study takes the hybrid or in-between position and is the actual practitioner-as-researcher who examines the field which he is familiar with as a consultant. The difference between being an outsider or an insider researcher might be seen as a member who is not actively participating in the core business of participants studied or a real active member who is already or becomes a fully affiliated group member during the study (Corbin-Dwyer and Buckle, 2009).

Adler and Adler (1987) describe the middle type of researcher as an active member, who becomes involved with the central activities of the group without fully committing to the members' values and goals. In this study the researcher participated and observed in three different cases for more than a year in which the outsider's role sometimes unnoticed fluently became an insider's role. Moreover, the case organizations were also customers during the study therefore they expected deliverables from the research that could be beneficial to the change process. Having worked as a manager and consultant (initially educated as a mechanical engineer) for many years, knowledge about change

management and personal biases will naturally have influenced the quality of the data collection and analysis for this study. But, within social studies with a strong qualitative research design the researcher is not separated from the topic investigated, implying limited contact with participants. Instead, the researcher is fully engaged in the research process (Corbin-Dwyer and Buckle, 2009).

How did the participants in organizational change perceive the researcher?
It can be questioned how the other participants in the change process perceived the researcher during the period he was attending and recording meetings, doing interviews, and taking notes often sitting in the back of the meeting room. In all the cases an introduction of the researcher was obliged by the client. In Case 1 this was done during a formal project meeting, in Case 2 a newsletter was send by email to all employees and in Case 3 the researcher presented his plans in a regular meeting with the District managers. As in many situations the 'outsider researcher' had to become acquainted with the employees working in the different organizations. By taking a very modest position, telling what the purpose of the study was, being interested in the work of the employees, asking them what was going on, and creating respect the researcher gradually became an insider.

It goes without saying that as much rigor as possible was employed in this study to remedy possible disadvantages of the chosen design. This study used multiple methods to collect the data. First, desk research was used to analyze organizational and project documentation. Second, semi-structured interviews were held that used 20 items (see also Section 4.6 for details) for roughly guiding the interviews. Third, the discourse analysis framework was created in which speech acts, negotiation strategy, communicative support and conversation phases were used to analyze formal and informal interactions. Finally, participant observation and the possibility to be there on the spot allowed the researcher to see and feel how the interaction processes developed.

A great advantage of this approach was the opportunity to collect data in different ways in order to obtain a richer and stronger array of evidence (Yin, 2009). When compared for instance to a single survey with closed categories on a scale, which would only give responses to the questions asked by the researcher, but that might not cover the topics considered important by the respondents in the organization, not providing very detailed data. The survey results might appear to be objective because there is no relationship between the researcher and the object of study, although this does not necessarily mean that it gives all the important information that can be gathered. Naturally, the in-between role of the researcher also has its disadvantages such as the danger of becoming more and more a part of the organization, and thus loose the necessary distance when investigating the topic of this study. In this way, blind spots can be created and the researcher is not alert to what is developing within the organization. Nevertheless, this disadvantage could be minimalized by conducting research part-time in all of the three case organizations. This would create some distance between the researcher and the researched, hence preventing him from being too bogged down in the details of each case.

In order to minimize the disadvantages, the researcher frequently took time for self-reflection, made field notes, had discussions about the data with outsiders (i.e., colleagues and other PhD candidates), organized the traceability of data to the final conclusions (and backwards), used multiple methods for triangulation, and performed data analysis with a team of outsiders. All these outside eyes looking in increased the reliability of data interpretation of one researcher and the process of drawing final conclusions.

Despite these measures to minimize the risk of the researcher bias, the participant observer can hardly avoid difficult situations (i.e., becoming an insider, becoming a member of the change project team, and becoming a representative of the management) when interacting with the various professionals, whether alone or in a group. Within the process of data collection the researcher's trustworthiness is very crucial. Related to this three issues regarding the ethics of the researcher are considered important (see Guillemin and Gillam, 2004). First, there is the ethical code. In the cases, sometimes difficult and personal stories would arise. Conflicting arguments within the management teams came to the surface and these disputes could only be revealed if the researcher and the interviewee(s) had a common ethical code in which it was clear that the stories that were told were safe with the researcher. During this study, it soon became clear that the researcher appeared to be trustworthy, because of the many personal stories told within a room or after a meeting in a corridor. These stories often revealed very detailed information about individual relations (both positive and negative) and explained the further cooperation-dynamics between employees. This type of information would not be available by doing a survey and was, on the side, very explanatory for answering some of the research questions.

Second, it is important to have a high ethical standard regarding confidentiality. This is important for interviews and when acting as a participant observer. The guarantee of anonymity via the assurance of confidentiality is the promise that the real names of persons, places and so forth will not be used in the research report, nor will they be substituted by pseudonyms (Corbin and Strauss, 2008). The interview reports only reveal the answers of the interviewee on the questions or a discussion that started but was not an intended question. During the interviews this was always a clear point at the beginning of the interview and the researcher informed the interviewee about the procedure of confidentiality and provided a written report of the interview to be edited before it was to be used for analyzing or quoting.

Third, is about the reflection by the researcher. Because of the observations and participation during this study the researcher and objects of study co-construct the data collection and analyzing process together. Within the data collection the researcher sometimes asked for certain data, but he did not know if that was available, whereas in other situations employees provided documents and data without having first been asked by the researcher. Moreover, in some situations the results of the questionnaires were discussed with employees in order to hear their interpretations of the results and to determine what the following step might be in this study. In this sense it is important that, if at all possible, the researcher has a natural attitude towards self-reflection, that he is able to engage in self-reflection periodically and adjust his research approach accordingly. Discussing data with colleagues (e.g., the two external consultants in Case 2 and the account managers from the consultancy firm responsible for the customers of Case 1 and Case 3), other PhD candidates also experienced what it was like to be practitioners during this study, thus this made it possible to reflect. The reflection also focussed on data selection (e.g., the utterances), the coding process, and interpretation of the priliminary findings.

4.4 The role of literature as a part of the research design

In this explorative study a kind of grounded theoretical approach was used as a way to generate new theory that is grounded in the field, but which is also set in the context of existing theory (McGhee, Marland and Atkinson, 2007). The Chapters 2 and 3 presented available literature from

both change management and linguistics as well. However, the literature as far as we found, hardly describes interaction processes between different professional groups, the role/function of professional discourses during that interaction, and how that might affect the change result. As described in Chapter 1, Corbin and Strauss (1987, 1990, 1998 and 2008) developed a pragmatic approach in which existing literature is used to structure the inductive explorative character of this study. Figure 4.1 shows that the phenomena (i.e., professional discourse and culture interaction), are new and emergent, that the concepts (i.e., professional discourse, professional culture) are unclear and vague, and that the variables (i.e., discourse analysis framework) are poorly measurable (i.e., coding) and operationalized (e.g., no polar anchors on a scale). Therefore, this study has adopted the Corbin and Strauss (2008) approach, because it uses a mixture of gathering empirical data from the cases and the literature study during the research process. Grounded theory is used in this study as a mixture between an inductive-deductive approach starting with a research situation instead of a pre-defined hypothesis (McGhee, Marland and Atkinson, 2007).

One of the fundamental issues in grounded theory work is the moment when the literature should be consulted. Glaser and Strauss – the 'godfathers' of the grounded theory approach - disagree on the use of literature and the need to conduct an initial literature review. Strauss (Strauss and Corbin, 1998) states that reviewing the literature early in the study is appropriate for several reasons; it stimulates theoretical sensitivity, it provides a secondary source of data, it stimulates questions, it directs theoretical sampling and it provides supplementary validity. But Glaser (1992) strongly disagrees with this point of view and discussed what is known as the two levels of literature required within grounded theory. These levels included 1) professional literature related to the topic and scientific field under study, which should not be examined until the researcher was in the field, and 2) the literature that could be beneficial when codes and categories of concepts under study had begun to emerge (McGhee, Marland and Atkinson, 2007). Table 4.3 below gives a summary of the arguments pro and contra literature review before developing the research design.

Table 4.3 Arguments regarding grounded theory and literature (adapted from McGhee, Marland and Atkinson, 2007)

Arguments in favour of a literature review before developing research categories	Arguments against a literature review before developing research categories
To provide justification of the study	To be strictly in keeping with a post-positivist ontology
To meet the requirements of Local Research Ethics Committees	To prevent the researcher from being constrained, contaminated or inhibited
To avoid conceptual and methodological pitfalls	To prevent recognized or unrecognized assumptions
To discover the extent of previous knowledge and therefore assess whether grounded theory is an appropriate method	To prevent generating a focus from the literature rather than from the emerging data.
To be 'open-minded' but not 'empty-headed'	To promise 'telling it as it is' (pure grounded theory) rather than 'telling it as they see it' (literature first and the empirical study later)

The literature is used to justify the study, to avoid methodological pitfalls, to discover previous knowledge, and to try to be open-minded, but not empty-headed, at the same time. All of these arguments can be applied to this study. Nevertheless, the researcher tried to be as open-minded as possible, and not to be constrained, contaminated or inhibited in advance by the literature, by keeping an eye open to the on-going emerging developments and by trying to tell it as it is. This in-between or mid-range way of working was needed because the three cases had been studied for more than a year in their real organizational and change context in which it is scarcely possible to not feel constrained, contaminated and inhibited. Finding out how professional discourse develops in change processes and how professionals interact requires an 'in-between' approach. First, for developing the discourse framework described later in this chapter the linguistic literature was needed. Second, for obtaining thick descriptions (Geertz, 1973) it was necessary to focus on the emerging interaction and situations in the cases that also provided the data for this study.

In this study the literature was used prior to and simultaneously with the gathering of data. During the data analysis, literature was used for reflection and for obtaining a further understanding of the contextual aspects. The researcher therefore used the literature primarily to discover previous knowledge from diverse fields (i.e., change management, professional discourse, language and culture) which could be useful in analysing the data. However, these theoretical insights and the practical experience of the researcher in change programs might also be viewed as a blinding element in the study. The linguistic literature presented a rather new field for the researcher when he started this study and it gave him many new insights into the role and function of discourse in interaction processes. The in-between approach is considered to be beneficial when studying practical managerial issues that make use of the knowledge and insights obtained from scientific literature.

4.5 Data collection of professional discourse and culture

In this study the inductive and explorative research design allows one to develop insights that might otherwise be difficult to acquire through the use of survey data or public documentation (Bonoma 1985; Corbin and Straus, 2008). The data collection was both qualitative and quantitative as it aimed to describe the communication among professionals during a change process and to show the frequencies of specific words in documents and utterances performed by the participants. The study has been set up as participant action research, which implies that constant interaction takes place between the research and those researched by means of different interventions. For example, the data obtained from semi-structured interviews were analysed and sometimes discussed with employees and/or managers who provided input for the following step in the change process. Another example, was when an intervention was tailor made to suit a specific situation in the case. This intervention subsequently became part of the research once again and it gave the researcher the opportunity to reconsider the original assumptions that had underpinned the previous actions. This creates a cyclical process of action and reflection, which is typical of action research.

In this study, three different case organizations were intensively followed during their change programs for at least a year or even longer. In the different change programs studied the specific group of engineers fulfilled different roles (i.e., internal consultants, subjects of change, and objects of change) in the change processes. In the change processes their social interaction with other

professionals and the characteristic use of language has been studied regarding their different levels of discourse. By analyzing language (i.e., speech acts), both written and spoken of the various professionals in different settings (i.e., project meetings, interventions, informal and formal messages and documents) it is possible to make statements about professional discourse for the specific professional groups. This has been worked out in three different case studies (multiple case study) and on multiple (discourse) levels by analyzing both the qualitative and quantitative data gathered during participant observation in the case organization. Nevertheless, the main research question also aims to answer how the different discourse affects the change process. Therefore, this study investigated the conversation phases (Ford and Ford, 1995) which may indicate the (mis)understanding, cooperation between people and the possible way to proceed in future actions together. Furthermore, a general indication has been given by the researcher regarding the successfulness of the change process based on three separate criteria: time, budget and performance.

Multiple discourse levels
As described in Chapter 3 discourse can be found and analyzed on different levels (Grant and Marshak, 2011). This study's primary focus is on the meso (group) level of interpersonal conversations and interactions and to some extent on the macro (organizational) and the micro (individual) level of language use by individuals. This individual level might give this study some useful insights into individual attitudes, affiliations, orientations and motives of the participants. This study does not make a very strict distinction between the micro, meso and macro level as suggested by Grant and Marshak (2011), but it understands these levels as being intertwined in which the local (individual and group) emerges into the global (group and organization) and the global influences the local. Table 4.4 gives an overview of the three case organizations, the multiple (discourse) levels, and the multiple methods that were used. Due to practical matters and management decisions made within the different case organizations, it was not always possible to follow the coherent methodology as described in this Chapter. Both the meta level and the intra-psychic level as described by Grant and Marshak (2011) in Chapter 3, are not applicable in this study because we primarily focus on the interaction or group level first and take the organization level as contextual factors into account. For all cases the participant observation of the researcher was applicable on all three levels, which cannot be viewed separately.

Table 4.4 Overview of the multiple case study including multiple levels, methods and number of (service) engineers involved

		Multi case		
Global	Multi-level[8]	Case 1 - Chapter 5 Home utilities Machine bureaucracy	Case 2 - Chapter 6 Aircraft maintenance Adhocracy	Case 3 - Chapter 7 Housing association Professional bureaucracy
	Macro level (Organization)	Desk research, context interviews, word count on organization and project documents		
	Meso level (Group)	Discourse analysis, communicative support, negotiation strategy and conversation phases		
	Micro level (Individual)	Speech acts		
Local				
Number of (service) engineers involved		650	220	40
Number of interviews		20 (3,0%)	29 (13,2%)	15 (37,5%)

In all three cases the same methods were used (i.e., word count on formal documents, semi structured interviews, discourse analysis, and participant observation) but the 'in-depth' collection of data differed per case because of the availability of documents regarding the change process (see also Table 4.5). The Home Utilities case provided the most data because of the organizational and change context. In this case 650 service engineers were involved in the change program, including a project team consisting of approximately 40 employees, and a regional roll-out plan with structured interventions that provided many opportunities for gathering data. The Aircraft Maintenance case included 220 service engineers, but it had a smaller project team and used less project documentation. Due to the organizational and change context of the three cases, the actual interventions scheduled in the change process varied which influenced the data collection. Finally, the Housing case was the smallest of all with 40 service engineers involved and the complete absence of a project group for the change process. Hence, the case situation (i.e., the organizational and change context) apparently had an influence on the possible depth of the data collection.

Below we describe the multiple methods used in the three case studies. First, the *desk research* was conducted mainly by reading formal documents (i.e., project documentation, strategic vision documents, and annual reports). Second, *semi-structured interviews* were held with participants involved in the change program and/or the organization in order to get a picture of the case organizations' organizational (i.e., organizational structure, processes and systems), change (i.e., change approach) and intentional (i.e., attitudes, motives, values) context. However, the personal attitudes, motivational aspects and values are on the intra-psychological level and beyond the scope

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8   These levels are similar to the levels decsribed bij Grant and Marshak (2011) in Chapter 3.

of this study. Third, we performed *discourse analyses* on formal written (project) documents (i.e., lexical on the individual word level), interview transcripts, and oral conversations (i.e., syntactic on the utterances) between participants involved in the change process.

Desk research

The desk research focussed on formal documents of the case organizations that related to the change project. Table 4.5 shows per case organization the documents analysed in this study and divided into three types: 1) *organization related* which refers to generic documents as annual reports, strategic vision documents, procedural documents, 2) *change project related* which refers to formal project plans, project evaluations, progress and issue documents, and 3) *intervention-related* documents which refers to documents that are developed during the change process such as impact analyses, insider stakeholder analyses, training modules developed as intervention in the change process, and feedback presentations by the researcher.

Table 4.5 Documents for desk research

Cases >> Documents	Case 1 Home utilities Machine bureaucracy	Case 2 Aircraft maintenance Adhocracy	Case 3 Housing association Professional bureaucracy	Totals
1. Organization - annual reports - promotion materials	 2 1 (DVD)	 1 	 2 	 5 1
2. Change project - project plans - milestone documents - progress/evaluation reports - action & decisions - steering committee - project newsletters - project e-mails - promotion materials	 1 - 10 21 1 2 1 1 (DVD)	 1 2 1 - - 2 	 - - 5 - - 1 - -	 2 2 16 21 1 5 1 1
3. Intervention - roll out schedule - impact analyses - stakeholder analyses - training modules - feedback presentations	 1 - - - 2	 - 1 1 7 1	 - - - 5 2	 1 1 1 12 5
Total no. of documents	**43**	**17**	**15**	**75**

Case 1 worked according to a planned change approach with a formal project organization in place, led by a project manager and separate work streams (i.e., for Information Technology, Training, Testing, Roll-out, and Change Management). In this organization it was required that the regional locations be informed about the change project, the monitoring progress and other issues. It

was customary that each week a particular topic would be discussed during the project meetings at HQ. This aspect of coordination might account for the relatively high number of documents produced. For the formal coordination process this case used many more documents, but the coordination between the professionals who participated in the change displayed other mechanisms that sometimes created misunderstandings. This case provides a perfect example of the machine bureaucracy in which strict plans are often made to inform the organization's employees and to guide the formal decision making process.

Case 2 also worked in a planned manner to realize change, but the fact that the small project team, led by two project managers, consisted of service engineers working closely together in one location might be the reason for the relatively low number of formal documents produced. Also the fact that service engineers are greatly involved in this change process might be another reason for why the number of documents is low. Engineers generally are poor writers since they perform actions continually and they do not devote much attention to writing about what was discussed. In this adhocracy, the engineers are very good at solving problems quickly when necessary, but soon after that they often jump to the next problem without actually writing down their experiences and learning opportunities.

Case 3 did not have a change project team and they also did not have a strict plan concerning the change. Here, a more spontaneous change approach shows that documents are created during the interventions (i.e., the conversation sessions) by the internal consultant and participants involved in the change process. The progress/evaluation reports are related to the interventions and are used to make decisions about "the next dot on the line" (Jobs, Stanford Commencement Address, 14 June 2005). This professional bureaucracy draws on the employee's responsibility to act and think locally and to find the best way to work things out within the overall strategic vision of the organization. This approach often requires open conversations in which employees together create their own reality and decide what is needed to proceed.

Semi structured interviews
In order to obtain a most complete picture of the organization and the change process semi-structured interviews were planned with several employees (the interviewees) in the case organizations. The planning of the interviews was not very strict and most of the time one interview led to the next, eventually giving a good representation of the different hierarchical levels and functions within the organisation. Table 4.6 shows the number of interviewees and their role/function per case (Total no. of interviewees).

Table 4.6 Interviewees per case, their role/function and total figures

Cases >>	Home Utilities Machine Bureaucracy	Aircraft Maintenance Adhocracy	Housing Association Professional Bureaucracy	Totals
Managers	10	6	5	21
Service engineers	9	28	15	52
Project managers	2	7	-	9
Other/coordinators	3	1	7	11
Total no. of interviewees	25	60	27	112
Total no. of interviews	20	29[9]	15	64
Total time recorded	14:30:29	Interview notes	11:38:39	26:09:08
No. of transcripts	14	0	12	26
Total word count (oral)	**51.300**	**5.375**	**44.532**	**101.207**

In several interviews the researcher spoke with two or more employees at the same time, which resulted in fewer interview moments as can be seen in the amount of Total interviews. This may have created some bias, but the number of group interviews was limited and as this study focuses on interaction processes, it seems logical to have some group sessions. When the interviewees gave permission for making a digital recording of the conversations, it was possible to make transcripts, otherwise the interview notes were used for analysis. In Case 2 it was clear in advance that it would not be allowed to make digital recordings due to the company's confidentiality requirements. In general, the interviews took between 30 to 90 minutes and, when applicable, the total number of digital recordings hours is mentioned in the row "Total recorded." Based on these recordings or interview notes, draft interview reports were agreed upon by the interviewee(s). The total word count of these documents is listed in the final horizontal row of Table 4.6. A detailed overview will be discussed in the respective cases in Chapters 5, 6 and 7.

The focus of the interviews was on the organization (1), change (2) and intentional (3) context to get a rich picture of the organization, the change program and the sensemaking of individuals who were involved in the change process. For this study we adopt the framework of the survey used by Werkman (2006) because she investigated organization change processes by asking her respondents to verify obstacles to change known from the organization and change management literature as a starting point. In this study these barriers are mentioned as reasons why change programs fail. These barriers fit within the three theoretical perspectives that have frequently been

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9 The 29 interviews were conducted by two external consultants and the researcher. The researcher had 8 interviews according to the framework in Table 4.7. One of the external consultants had 13 interviews to investigate the functional requirements and impact analysis of TRAX, and the second external consultant had 8 interviews about generic topics regarding the change program. The combination of these interview results was discussed in a feedback session with the management, project management and representatives from the employees in order to determine which steps should be taken next in the change process. Most of the time interviews were held with several employees or in group sessions.

used in literature to explain the difficulties in change processes (Werkman, 2006). First, organization science perspectives which refer to organizational characteristics and contextual aspects. Second, the change management perspective, which focusses on the characteristics of the change process and change contexts. Third, the social interpretive perspective, thus focussing on the perceptions of interaction processes between stakeholders. The survey done by Werkman (2006) is based on the questionnaire developed by Bennebroek Gravenhorst (2002) in which 89 questions are clustered into 16 categories. Nevertheless, neither in the study of Werkman, nor in the questionnaire of Bennebroek Gravenhorst attention was paid to professional discourse and culture differences in the interaction of participants in change. In this study we transformed the questionnaire into a semi structured interview protocol in order to get a first impression of the organizational and change context of the cases. This shifted the focus naturally to the specific professional discourse and interaction involved, and analysed by the discourse analysis (DA) framework.

This study pays specific attention to the role of (line) managers, consultants and service engineers in addition to the original survey of Werkman (2006) to make her questionnaire more precise and consistent with the three professional groups we studied. Furthermore, a few questions completed the original survey to find out about possible differences in the individual beliefs and values of the different professional groups, as an extra at the the intra-psychological level. The16 categories of Werkman's questionnaire, as supplemented above, gives in total 20 different items for the semistructured interviews which were used as a guide list for this study (see Table 4.7). The actual questions that were asked depended on the interviewees position and role within the organization, and the change process or other important issues that arose during the interview. The interviews were also used for the researcher to gain insight into the case organization and the change process providing circumstantial evidence. Table 4.7 shows the items and descriptions clustered according to the three contexts of which the organizational and change context are especially important given the main research question which priveleged the interactional level.

Table 4.7 The 20 items and their description used in the semi-structured interviews

| 1. Organizational context | |
The characteristics, in tangible and intangible aspects, of an organization	
Item	**Description**
1.1 Goals and strategy of the organization	Clearness of organizational goals and how these goals are reached. External focus of the organization strategy. Flexibility of the organization to respond to market issues and developments in the market.
1.2 Technology in the organization	The availability, use, and understanding of technology (e.g. information, processes, and information technology systems) in daily work. Support of information technology in daily work.
1.3 Organizational structure	Rules and procedures used in daily work. The way the organization focuses on systematic processes, control, and the way the work is executed. The number of managerial levels in the organization.
1.4 Culture and leadership	Support for one's own initiative, teambuilding, cooperation, trust, and openness between employees and management.

1. Organizational context	
The characteristics, in tangible and intangible aspects, of an organization	
Item	**Description**
1.5 Work and cooperation	The way skills and knowledge of employees are used in the organization. The balance between work and pleasure. Working together with colleagues to realize tasks within a department or cross-departmentally.
1.6 Role and behaviour of service engineers in the organization	The way service engineers behave, what they do, and how they respond and communicate with each other.
1.7 Tensions between people and groups	Tensions between individuals or departments within the organization and as a result pressure on the existing culture.
1.8 Relations between individuals or departments	Conflicting interests between individuals or departments.

2. Change contexts	
The characteristics of the change approach and the degree to which the organization changes to meet internal and/or external demands.	
Item	**Description**
2.1 Direction of the change process	Clearness and agreement about the change direction and the way to realize the goals of the change.
2.2 Timing of the change process	The number of change processes in the organization that also affect this particular change process. Time available for acceptance and becoming used to the changes.
2.3 Communication about the change process	Clarity and frequency of communication regarding the change process. How well known is the communication regarding the change process? The communication structure regarding the change process.
2.4 Technology related to the change process	The realization of new technology during the change process. Capacity for development of technology, alignment and perspective on the new technology.
2.5 Role of line management	The role of line management during the change process, their involvement, commitment and use of leadership skills to establish the change.
2.6 Role of consultant	The role of the consultant during the change process, his/her vision, expertise, ambition and approach to change.
2.7 Role of service engineer	The role of the service engineer during the change process, his/her vision, expertise, ambition and approach to change.

2. Change contexts	
The characteristics of the change approach and the degree to which the organization changes to meet internal and/or external demands.	
Item	**Description**
2.8 Expected change result	What employees expect regarding the change result. The impact on jobs, career perspective, normal work, and the benefits for the employee.
2.9 Creating support for change	The support employees will give to the change process. The way employees show initiative and support the change. Possibilities for influencing the change process, training, and support from (top) management.

3. Intentional context	
The non-overt, implicit assumptions of individuals and the way this is expressed in their motivation.	
Item	**Description**
3.1 Motivation and ambition	The motivation of individuals to carry out their specific jobs within the organization and the ambition of individuals for what they wish to achieve in their work.
3.2 Beliefs	The core beliefs of individuals (i.e., how we think what is really true)
3.3 Values and assumptions	The core values and assumptions of individuals (i.e., the long-learnt automatic responsis and established opinions).

Discourse analysis

The third method of collecting and analysing the data in this study was discourse analysis and it is used in this study to answer the subquestions as described in the beginning of this chapter (see also Chapters 1, 2 and 3). To measure these interaction processes and the professional discourse of the actors, this study used a discourse analysis framework as described in Chapter 3 which incorporates speech acts, negotiation strategy, communicative support and conversation phases.

Ulijn and Strother (1995) mention five levels of communication in which representing letters and word forms is the most detailed and lowest (fifth) level. These individual letters and word forms return at the next higher fourth level, where they are combined into lexis or the lexicon followed by the sentences (i.e., syntax) on the third level. These sentences together form discourse structures (i.e., texts) and finally, on the highest or first level, they lead to a total and comprehensive meaning (i.e., semantics) that will be given by the writer / teller and interpreted by the reader / audience. In change projects and in organizations oral (speech) and written language are used to understand, make sense, give meaning and achieve the change objectives. For the cases analysed in this study the levels one (i.e., meaning) through four (i.e., words) seemed to be necessary to answer the main research question. Table 4.8 gives an overview of the different levels of communication, the methods used and the relevant sources in which the data was collected.

Table 4.8 Relation between oral and written levels of language, methods and data sources

Level of oral and written language	Method of data collection	Relevant data sources
1. Semantics (meaning)	Participant observation Interviews	Observations during workshops, meetings, informal gatherings, and interview sessions
2. Discourse structures (text)	Participant observation Digital recordings	Workshops and intervention sessions
3. Syntax (sentences)	Participant observation Digital recordings	Workshops and intervention sessions
4. Lexical (words)	Desk research and word count (using WordSmith)	Company reports Project documentation
5. Morphology (word forms) and phonology (letters and sounds)	Not applicable	Not applicable

The combination of studying both formal written and informal oral language makes case studies more informative, especially when the elements of a narrative approach are combined with a process and context analysis (Buchanan and Dawson, 2007). The formal written (project) documentation, the interview transcripts, and both formal and informal oral conversations between participants were analysed. On written (project) documents word counts were performed with WordSmith software in order to find typical words that appear to be useful by the writers for communicating their messages (see Level 4 in Table 4.8). During the participant observations transcripts were made based on the digital recordings which were then analysed by using the discourse analysis framework (see also the next Table 4.9 for details) giving insights into the typical sentences or utterances used (see Level 3 in Table 4.8) and could also reveal some discourse structures within the interaction (see Level 2 in Table 4.8). Finally, participant observations, interviews, but also informal chats with employees, gave insights into the sensemaking processes and the meaning making among the participants (see Level 1 in Table 4.8). Obviously, each level is not completely independent, as the levels tend to be mixed and sometimes someone's real opinion concerning a conversational topic emerged later during an informal talk at the coffee machine.

During this study many meetings, planned interventions, unplanned sessions, gatherings and conversations were observed by the researcher while participating in the change process. The notes taken during these formal and informal meetings reflect the actual language use of the participants and their interpersonal conversations. To investigate the interpersonal conversations, a discourse analysis was performed based on the combined use of 1) speech acts (Searle, 1983), 2) communicative support and negotiation strategy (Ulijn and Strother, 1995), and 3) conversation phases (Ford and Ford, 1995). This discourse analysis (DA) framework (see Table 4.9 for details and definitions) gave the opportunity to analyse conversations from three different angles: 1) the typical professional discourse of a specific professional group using the speech acts, 2) the negotiation

process in which it might become clear whether or not participants show cooperativeness or non-cooperativeness towards the change process and how other participants react to this, and 3) the way a conversation proceeds through four theoretical phases that should be addressed in conversations. This third method also might show that conversations do not always reach at the third (performance) or fourth (closure) phase, which might indicate that the cooperation in change processes is hampered. One possible disadvantage of this DA framework is, of course, that it is difficult to see what the possible relationship between these different methods might be. Does a certain speech act indicate cooperativeness and will that lead to the closure phase of the conversation? What will happen, if someone is non-cooperative? Could that influence the conversation phases by not reaching the closure phase? Furthermore, this DA framework only offers a lens to examine what participants actually say, but not what they intend to do.

Table 4.9 shows the detailed items of the discourse analysis framework by using the discursive angles described above and provides the definitions used in this study for coding the selected utterances from the different meetings and conversations. Whereas these analytical foci are mainly used separately in linguistic analysis, this study combines them in order to provide a comprehensive insight into the interaction dynamics of professional groups.

Table 4.9 Definitions used in the DA framework

Speech acts (Searle, 1983):	
Assertives	Claims supported by evidence, true and false statements
Expressives	An affective state (e.g. worries, apologies, personal problems)
Declarations	Create a new set of opening conditions
Commissives	Promises or natural responses to a request committing a future action and thus showing commitment
Directives	Request, to get someone to do something (e.g. invitations, instructions, orders and commands)
Negotiation strategy (Ulijn and Strother, 1995):	
Non-cooperative	The use of utterances that criticize, denie, disapprove, object, reject, show indignation and/or irritation
Cooperative	The use of utterances that confirm, admit, show goodwill and/or inspire confidence
Communicative support (Ulijn and Strother, 1995):	
General	These supporting kinds of speech acts use utterances that ask for understanding, confirmation, information to explain, request, stipulate and/or suggest
Meta communication	These supporting kinds of speech acts use utterances that conclude, close, engage, offer, promise, remind, repeat, resume and/or specify

Conversation phase (Ford and Ford, 1995):	
Initiative phase	This phase relies on assertions, directives, commissives and declarations
Understanding phase	Are generally characterized by assertions and expressives. Claims are made, evidence and testimony given, hypotheses examined, beliefs and feelings explored, and contentions maintained
Performance phase	An interplay of directives (requests) and commissives (promises) spoken to produce a specific result
Closure phase	Are characterized by assertions, expressives, and declarations to bring about an end to the interaction process

The DA framework (see Table 4.9) is based on a diverse combination of scientific publications. In his speech act theory Searle (1983) understands speaking as a kind of doing and he regards the uttering of words as actions, which can have an influence on the re-actions (other words) of others. This view implies that words are more than only information transmitters. Once uttered they can have an impact on (the behaviour) of others. This theory used in linguistics gives a possibility for analysing actually what is said by individuals, namely their utterances. However, for investigating sensemaking the speech acts alone do not provide enough information, because they only reveal what one person says and how someone responds to that. For instance, it might be possible that the use of commissives and directives (see Table 4.9) can be an indication for sensemaking, but it is assumed that there might be a gap between what people say, what they actually think, and what they eventually do. Therefore, being 'in the organization' is also considered important.

Furthermore, change projects are all about negotiation and power relations between participants (see Chapters 2 and 3). This is the argument to involve other dimensions (non-cooperative and cooperative) in addition to the speech acts. This study also intends to find out if certain speech acts uttered by the professionals differ, and might account for misunderstanding during the conversation. We assume that conversations in general follow a kind of phasing which leads to next steps to be taken and closes past discussions. This is also assumed to be applicable in conversations with regard to change processes. Therefore, the work of Ford and Ford (1995) concerning conversation phases (i.e., initiative, understanding, performance and closure) is very useful to this study. The discourse analyses framework is used as a multi-faceted lens to view the language use of participants with different professional backgrounds which might lead to other perhaps better insights into the dynamics of change.

The coding process
The DA framework was used to analyse in a qualitative way the selected utterances of the interacting professionals when attending meetings. These utterances were coded using the DA framework with speech acts, negotiation strategy, communicative support and conversation phases. Normally coding qualitative data requires the statistical Cohen kappa or Kappa Measure of Agreement for inter-coder reliability. In this statistical analysis two coders are required to assure consistency of the coding (Pallant, 2010). This study performed the coding of utterances during coding sessions with 6 – 10 coders, which is too much for the statistical tests. Having more than two coders made the use of the Cohen kappa impossible. Instead of Cohen kappa this study uses

a technique based on the highest percentage scored by the whole group of coders which reflects consensus on the coding of the specific utterance. The group of coders consisted out of trained students and experienced PhD candidates (see for details Chapters 5, 6 and 7).

Given the main research question and the six subquestions asked at the end of Chapters 2 and 3, and repeated in the beginning of this chapter, together with the model of Ulijn and Weggeman (2001) (see Figure 3.5) about the organization culture and setting we can conclude that the methods suggested in this chapter are applicable for this study. This methodology requires a frame shift using linguistics to study phenomena of the organization sciences, instead of the other way round. Grant et al., (1998) suggested 15 years ago to use speech acts (see Figure 3.6) as one method to study organization dynamics, but up to now linguists have failed to tackle crucial issues of organization science, such as the one of this study with some minor exceptions related to negotiation strategies across cultures (see van der Wijst and Ulijn, 1995 and Ulijn, Lincke and Wijnstra, 2004). In the Chapters 5, 6 and 7 this line of reasoning is used in a parallel way, while Chapter 8 presents the cumulative cross case analysis, taking also the organization and change context into account. Furthermore, we relate TI and SI as drivers for the organization change processes. Together, this leads to a broad picture of the service engineers in change and how their professional discourse and culture interact.

4.6 Summary

This chapter described the methodology applied in this study and takes a constructivist paradigm. We assume that the phenomena in this research are hardly studied, and that the concepts are not clearly defined in the literature, and that the variables are poorly measurable and not operationalized. This implies that the nature of this study is explorative, taking an inductive research design which aims to describe the communication between three different professional groups during a change process. As a consequence, this research design leads to field research in which case studies are considered as an appropriate and flexible approach. For data collection this study uses multiple methods (desk research, semi-structured interviews and a discourse analysis framework) within three cases. The data of oral utterances was mainly analysed in a qualitative way, but quantitative analyses were also made of the formal written documents. It can be assumed that this research design provided a diverse set of data offering the opportunity to describe each case in depth.

Within this study we employed as much rigor as possible, but the research design also has some limitations. First, the role of the researcher as a participant observer might have influenced the interaction of participants and their language use. Second, the coding of the utterances might be considered subjective. These limitations were known and anticipated in a reflective manner. In all three cases it was clear that the researcher acted as a participant observer, taking notes, asking questions, and not interfering with the process of change as a consultant. The coding process was performed with 6 – 10 trained coders who all scored the utterances individually. The highest percentage given for a particular discourse category (speech act, negotiation strategy, communicative support, conversation phase) was considered as a unanimous vote of the coding group. The different methods used gave some insight in the data from different angles that could be compared afterwards. Overall it can be concluded that this qualitative research design and the quantitative measurements on the linguistic data reflect the overall gist of the conversations and reflect the organizational and change context in an appropriate way.

Chapter 5
The implementation of a Tablet PC in a Home Utilities organization

This chapter[10] describes the process of organizational change due to technical changes, suggesting that community-specific differences in discourse may have a considerable impact on its success. Section 5.1 deals with the organization context of the case and focus on the implementation of a Tablet PC that changes the work of service engineers. Section 5.2 details further the role-changing functions for the service engineers as a consequence of the implementation of the Tablet PC. Section 5.3 is devoted to the discourse analysis performed in this case organization and focus on the professional discourse and culture of managers, internal consultants and service engineers in the utilities sector. Following the chronological process of change, we first focus on the statements made in the semi-structured interviews, and then on a discourse analysis of a regional meeting. The results of the semi-structured interviews show the different perceptions of participants involved in the change process when the researcher began his role as a participant observer in this case. The discourse analysis of the regional meeting was performed much later during the change process, when the first regional roll-out plan was executed. In Section 5.4 we analyse the typical speech acts and relate them to the professional roles involved in the regional meeting. Finally we give preliminary answers on the subquestions, our conclusions and a summary in Section 5.5.

5.1 The implementation of Tablet PCs for service engineers

The implementation of the Tablet PC for service engineers in this organization did not come out of the blue for the employees in the organization. For quite some time the organization had been working on a strategic vision. The logic behind the strategic vision was to improve customer satisfaction and cost effectiveness. The service engineers played a crucial role in realizing these goals. It was believed that motivated and ambitious service engineers who were equipped with the aid of innovative ICT instruments may make a difference in cost effectiveness because administration could be done by the service engineers instead of by back office employees. The field office (e.g., fully equipped maintenance and service cars) could be important for achieving the strategic goals of the organization (Corporate vision document, November 2006). In this section we first describe the contextual factors as discussed in Chapter 4, and asked during the semi structured interviews with employees. Through this organizational context we gain a better understanding of the practical situation in which the change process took place.

This study was conducted at the Business Unit (BU) Infra Services (IS) of a Dutch home utilities company that delivers natural gas and electricity to its consumers and businesses. The Infra Services is responsible for the maintenance of the infrastructure. The whole organization employs 3,678 people of whom 3,083 (84%) are male and 595 (16%) are female (most of the female work in the

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10 This Chapter has been based on Pieterse, J.H., Ulijn, M.J. and Homan, Th., (2011). How change management is influenced by differences in professional discourses: A conceptualizing study on the adoption of an ICT tool for service engineers in a global perspective. *Journal of Rhetoric, Professional Communication, and Globalization.* Vol. 2(1), pp. 51-92.

back office). The employees in the age range of 45–55 years form the largest group: 1,457 (40%). The organization is divided into 2 major sub-organizations: the commercial production and delivery organization and the infrastructure organization (IS). IS employs in total 1,152 (31%) people. As of July 1, 2009, both organizations have been operating as fully stand alone. The organization is based on a traditional hierarchical structure, as can be seen schematically in Figure 5.1.
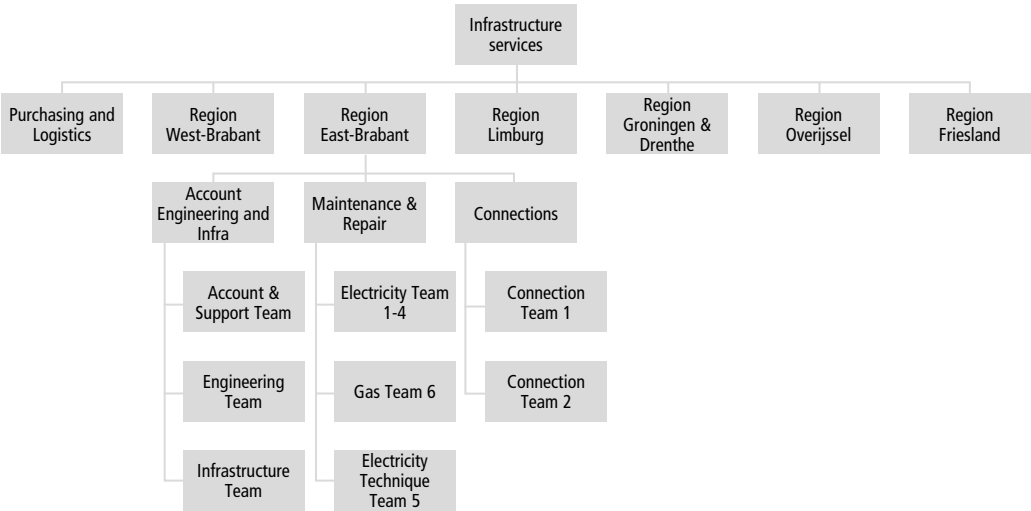
Figure 5.1 Organizational chart of BU Infrastructure Services

The management team of IS represents the six regional managers and several staff managers. Each region has three different departments with departmental managers. In each department, several teams work on electricity or gas installations with a team leader who is in charge. In one region, approximately 200 - 250 employees work on maintaining the infrastructure. The implementation of the Tablet PC focused on the service engineers who worked in the maintenance and repair teams. In these teams, 526 service engineers (mostly male) work alone or in small groups in different (field) locations in the region. The organization has been decentralized into six separate regions, but all of the primary processes for business and consumer demands can be dealt with in an integral way in each corresponding region. Due to this organizational structure, the managerial span of control of the IS management team is huge and at least four managerial layers are in place. The regional management has the integral responsibility for budget and resources and is supported by centralized staff (e.g., Human Resources, Finance, and Purchasing & Logistics).

The Headquarter (HQ) of IS is located in the Netherlands, the teams are dispersed all over the Northern, Eastern, and Southern part of the country. Furthermore, in the region the three departments (AE&I, M&R and Connections) operate in a quite isolated way. The Maintenance & Repair department (M&R) has four teams for the maintenance and repair of the electrical infrastructure, one for gas infrastructure and one team for special electrical engineering technology. Each team has approximately 12 – 25 employees and a team manager. The service engineers identify themselves most with their own team. After this inner circle, the M&R department forms the second level of their group identity. The identification of the employees with their region is also strong

because of the differences in regional (sub)cultures (e.g., the Frisians in the North have a more Calvinistic attitude whereas the Limburgers in the South, who are Catholic, have been raised with a more Burgundian style of living). Nevertheless, when the service engineers meet field observations showed that the engineering culture is a binding element in their work.

Although all regions work within the national and organizational regulations for utilities, the work processes differ on a local level. For instance, the Northern region had different work processes compared with the Southern region. This has a historical reason as many home utility organizations were previously owned by the local government. As a consequence the local infrastructure and regulations affect the way in which one works in a particular situation, and this still influences the work proceedings today. For the implementation of the Tablet PC this was, among many others, one of the constraints because the IT software packages were supposed to be standardized, and therefore could not be tailor-made to suit to local requirements. Thus, the software packages required that local work procedures to be generic throughout the country. Therefore, the implementation of an innovative Tablet PC could change the position and role of the service engineers. In this we can see that a technical innovation, such as the implementation of the Tablet PC, also led to more social innovation (the changing role of the service engineer).

We conclude that this organizational context is complicated in a sense that both the physical and 'mental distance' between the IS management team and the service engineers in the teams is large. Moreover, many key persons (i.e., IT manager, project managers, regional managers) have different roles and positions towards the change program. During the semi structured interviews project members made statements related to the typical organizational context. They had to cope with *"the relations between the many projects within this organization which made it difficult to implement this change. Different departments within IS are working on change programs and improvements. At this moment also other change programs are on-going. We really want to implement this change in a very structured manner along clear phases with involvement of the target group."* The project members also *"wanted the best for the service engineers and hopefully they could explain that this change fits within the strategic focus of our organization."*

During the semi structured interviews, it also became clear that the first achievement of the change project team would be to implement a technically working Tablet PC with functional applications that was accepted by the service engineers. The strategic vision and the assumed *"central directive function for the service engineer in the maintenance and repair process"* became the second best option in the change process.

Obvious the change project team started with good intentions implementing both a working Tablet PC together with a more central role for the service engineers. However, during the change process critical deadlines were not met because of technical difficulties, manpower costs increased, and deliverables had to be deferred. Due to organizational factors such as a formal hierarchical structure, a strict project management approach, and a task-driven culture, the change project team started to shift its focus. First this could be seen in the measurable objectives defined by the steering committee, such as: 1) the number of employees having a Tablet PC, 2) the number of service engineers trained on the Tablet PC, and 3) the number of regional teams that had executed the centralized roll-out program. Second best became the acceptance and actual use of the Tablet PC by the service engineers. This shift in priorities by the change project team might have initiated

a strong top down (technology driven) push enforcing resistance among the service engineers about the whole change process. The change project team did not seem to understand that they were creating this resistance to change themselves just in how they acted towards the service engineers.

The organization has strict procedures and governmental regulations which have to be taken into account leading to standardized work processes and formal (written) communication. The work regarding the infrastructure of gas and electricity is obviously subject to a great deal of regulation, first and foremost because of safety and the continuity required for both business and consumers.

5.2 Role-changing functions of the Tablet PC

This section describes the change and intentional context with regard to the introduction of the Tablet PCs for service engineers. The change context refers to the characteristics of the change approach and the degree to which the organization itself changes in order to meet the internal and/or external demands as described in Chapter 4. The change project started in 2007/2008 with the formal introduction of a Tablet PC. The reason for implementing a Tablet PC was part of an overall strategic vision from the IS management team in their wish to establish improved customer satisfaction, a stable and capable workforce, and cost management improvement (more efficient and cost-effective).

The position of the service engineer was considered to be crucial in realizing these strategic goals because they had day-to-day contact with the actual customer. These service engineers serve as the ambassadors towards the market and they need to occupy a central position in which they can pull the strings in order to maximise customer satisfaction. Another expected effect was the increased job satisfaction and motivation of the service engineers by giving them a more directing role in the maintenance and repair process. The decreasing number of new and younger service engineers and the gradual ageing of the employed service engineers (average is 47 years) made it also important, from an employers' perspective, to be an attractive employer for new service engineers in the home utilities organization. That is why the service engineers became the central target group during the change process for realizing higher customer satisfaction rates and more cost effectiveness.

The rationale behind this vision of the IS management team was that a motivated service engineer would work with more pleasure and avoids making mistakes. That would lead to (cost)effective and efficient work processes and to an increase of customer satisfaction. The field office or service car of the service engineer should then become a motivating workplace with all of the necessary tools at hand to solve problems adequately and to improve the professionalism of the service engineer. Finally, it was thought that this would lead to increased customer satisfaction and as a consequence improve business performance. The Tablet PC is the support tool that digitally connects the service engineer to the back office employees, and to his colleagues, shows up to date information about the status of work in progress to answer customers' questions, to order spare parts, and to pick customer orders from a list. Figure 5.2 (Company presentation, 2011) shows a picture used in the change project representing the central directing role of the service engineer in the work process.

Figure 5.2 The service engineer in his directing role (formal organization document)

The most tangible element in this change process for the service engineers was the Tablet PC and the installed applications. This robust Tablet PC should become a central tool with which the service engineer could do all the things he otherwise would have had to do on paper or using a mobile phone. Many ad hoc conversations with back office employees should be minimized and one of the additional benefits was a reduction of back office employees in the regions. When the Tablet PC had just been implemented, only office applications (MS Office, mail, and wireless internet) were used, but later new applications, necessary for performing the job, were added. The case study focuses on the implementation of the *Work Order Management* (WOM) application for both the service engineers working in the field and at the office. With these software packages, the service engineers could communicate with the back-office system, by transferring data and filling in documents directly from their field location. Finally, this innovative ICT tool was thought to change their way of working, planning, registration, and communication.

By using the Tablet PC and the software, the service engineers could now communicate by e-mail with their colleagues and back-office employees, receive information about corrective maintenance or repair orders from the planning department, send information about corrective actions taken and additional materials needed, and carry out their own planning during the day. This places the service engineers in a central directing role between the customer and their own organization. They initiate action and plan their own workload together with the support of the back office and their colleagues. This was quite different from the situation before the implementation of the Tablet PC when the service engineers had to start the working day at the office and receive the work orders from the planning department. During the day, the paper work had to be completed, which was delivered to the back office by the end of the day.

In the time before the implementation of the Tablet PC, generally speaking, the service engineers were not in control of their own work. They were dispatched and could not carry out their own planning, could not see if materials were available, or make proper appointments with customers to avoid time spent waiting. The implementation of the Tablet PC would change this old way of working and therefore required a shift in the way the service engineers performed their job. In addition, of course, technology acceptance played an important role in the success of this change.

For the implementation of the WOM application, the engineers attended a short basic one-day training in which they learned to work with the Tablet PC and the software. About six months after this implementation the Field Offices Service desk (FOS) initiated a survey (January 2008; n = 526) to investigate the actual use of the Tablet PC by looking at the 'log-on' registrations of the service engineers. Just 50% (263) of the engineers appeared to be using the system on a regular basis after 6 months, and 12 months after the first roll-out, about 80% (421) of the service engineers were using the Tablet PC. The remaining other 20%, included those engineers who only used the very simple functions of the software or who often had to ask a colleague for help. Given the results of this survey about the actual use of the Tablet PCs by the service engineers was not considered to be very successful by the change project team. Although 80% seems to be good, it took the organization 12 months to reach that percentage while the whole regional implementation plan was initially planned for about 12 weeks per region according the roll-out plan of the change project team. This might be considered as an unrealistic roll-out plan, but it was communicated with region and the M&R department managers and expected to be doable.

A survey (January 2008) conducted by the Unified Field Office (UFO) project focused on the evaluation of the training courses given to service engineers to teach them how to work with the Tablet PC and the support they had received from the Field Office Service desk. Within the whole population (n=526) a response rate of 41% (217) had been obtained. The service engineers gave 6.5 (on a scale from 1 to 10) to the overall project (roll-out, training, helpdesk services). About 81% (176) of the respondents were positive about the roll-out, 66% (144) were positive about the training, only 34% (74) were positive about the toolboxes built into the maintenance cars. These were quite promising results, except the 34% for the toolboxes.

The overall conclusion of this survey was that the service engineers expect easy to use tools. They see the Tablet PC as a tool or instrument that simply supports them in their work. Although the training sessions were valued positively, the actual use of the Tablet PC seemed to show the opposite. Service engineers, especially the older employees, were not thrilled about starting to work with the Tablet PC. This was in 2008, but when the researcher met a service engineer at his home as a customer in 2013, this still seemed to be the case for many other service engineers as well.

The WOM software included not only new software but also other work processes for both the engineers and the back-office employees. In fact, this software fits into the larger corporate vision in which the service engineers should be working as a central linking pin in the maintenance and repair process. The corporate vision was to develop an entrepreneurial attitude (result-driven, self-developing, and communicative), customer- and service-oriented attitude (adoption ability), and a drive for cross-functional cooperation. This vision concerned particularly the service engineers and their back office colleagues. These entrepreneurial attitudes and competencies required can be related to social innovation (SI), while the Tablet PC is more a technology driven (TI) improvement.

In addition, as part of the new role for the service engineers, leading principles were defined by the IS management team as a part of the strategic vision. In close cooperation with the change project team these principles would be implemented throughout the IS organization together with the Tablet PC and the WOM application. The four leading principles were: 1) optimized and standardized work processes, 2) optimized facilities for cooperation in daily work, 3) a focus on the complete production flow and 4) tailored freedom within the rules and regulations. It was assumed that both the competencies and the leading principles would create a different kind of mindset and work environment in which the overall goals of the change program, such as satisfied customers, proactive service engineers, and cost effectiveness, could be realized.

The change project team that had already been formed in the first phase for implementing the UFO part was now developing the WOM software, for increasing the quality the Tablet PC use, and also for addressing the soft skills of the engineers and their team managers. The project team consisted of IT professionals who were developing, building, and testing the WOM application and two internal consultants who did the whole implementation in the business, both hard (IT related aspects) and soft (behavioral aspects). The complete change project team, located centrally at the HQ, consisted of more than 30 employees, roughly organized in two streams; Business and ICT both following a project management way of working.

The monthly progress reports kept the steering group informed and issues were discussed with the project manager. Every two weeks project meetings were organized at HQ, chaired by the project manager. Both stream managers and most of the team leaders responsible for the diverse topics attended the regular meetings. Each project meeting followed a strict agenda in which each team leader presented a fixed format progress report. This so called ABCD-report highlighted activities, benefits, concerns, deliverables, and a list of the next activities. The progress reports had to be delivered on Mondays during the week of the regular project meeting. However, in daily practice we observed a great deal of disturbances that influenced this strict and linear way of the project management approach. Meetings were mainly used as an exchange forum for issues and difficulties encountered during the change process. Many discussions and questions about 'how to move on' and 'what to do' made it hard to follow the agenda. We often observed that discussions of similar topics from just another angle went on due to recent insights or because participants had talked with other people and gained new insights. Furthermore, different interpretations of specific assignments caused delays in the change process. This made many of the project meetings not very effective from a project management perspective. Figure 5.3 shows the project organization for the change process.

Steering
group

Representatives
key-user group

Project
Office

Project manager

Stream manager
Business

Stream manager ICT

Change
management

Infrastructure
services

Project
communication

Infrastructure
services

Business
processes

Infrastructure
services

Business
blue print

Support
Tablet PC

Business
roll out

Support ICT

Development
"next waves"
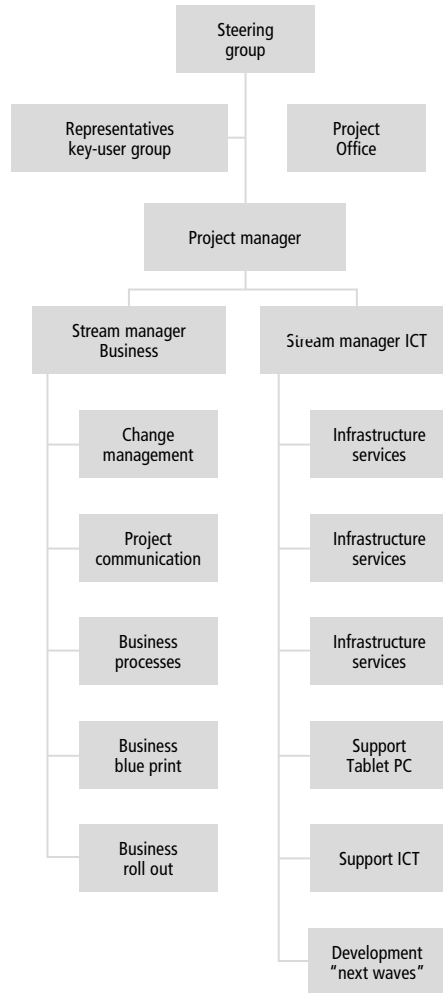
Figure 5.3 Project team for implementing the Tablet PC

One of the central themes during the meetings observed was the on-going discussion about the actual ICT planning. The Business stream manager in particular wanted to have an up-to-date plan for the implementation of the WOM application. This would provide him with the clear deadlines for the regional implementation and roll-out plan. However, the ICT stream manager could not give a detailed planning for the implementation of the WOM package because such a detailed planning would depend on the test results of the software testing. If these test results indicated that there were problems requiring lengthy time to solve, more resources would be needed to do all the bug fixing. However, if only small problems would had found, the number of days required to do bug fixing would of course be limited. Another argument for not making an ICT planning was that some of the regional managers and key users had come up with new requirements during testing which then had to be incorporated in the software or had to be discussed first. These points of discussion returned during many of the regular project meetings without any real solutions being found.

During several project meetings we could observe that the different participants in the team had difficulties reaching clear understanding about issues such as, IT planning and testing, schedules for training, and regional roll out plans. For example one of the consultants asked for a stakeholder analysis regarding the change project and the different perspectives of stakeholders on the IT issues. This analysis was done by the IT manager who came two weeks later with a sheet in which he named the people who were responsible for the several IT systems and who he used as a point of contact. This was not the intention of the consultant, who wanted to know about the possible threats to the change project and the stakeholders who might hamper progress. This example illustrates the different meaning professionals give to the same word (i.e., a stakeholder analysis), and which is easily called misunderstanding, but in fact has a cause at a deeper professional discourse level.

Another aspect in the change context was the position of the regional and team management who had an in-between position. They were the linking pin between the change project group and the service engineers being end-users. Some managers stated that their focus was *"first on the operational actions and at the same time organize all the change effort in our region. Most service engineers work in the field so we don't see them often."* A general statement of team managers, especially those who were not directly involved in the change project, was: *"the implementation of the Tablet PC is bad. A lot of activities are 'dropped' in the region without any support of the project group. We must find out ourselves."* A manager from the maintenance and repair department stated: *"We really see the benefits of this change but we also have to perform our operational job."*

It seems that the close proximity of a member of the change project group increases the understanding of what is taking place. Of course change project members attend the meetings and they are in the heat of discussions regarding the change project being in the position to influence particular outcomes. The regional and team managers only heard about the decisions that were made by others, whereas they are the ones who have to explain these decisions to the service engineers. To overcome this gap between the change project team and the service engineers in the field a user group with representative service engineers was formed. They could inform the project team about specific user requirements, do the initial testing of the Tablet PC and the WOM package, and act like informants towards their colleagues in the field. However, not every service engineer in the user group was able to function as a linking pin between his direct colleagues and the change project team. Some of the user group members were quite communicative and they were able to fulfil this intermediate role, but many others were not that skilful and missed the conversational skills. In participant observations we heard statements from service engineers saying: *"One of my colleagues is participating in the user group but we never hear what he is doing there and what they are discussing. Sometimes our team manager gives a short presentation during our weekly work meeting, but I have never seen that colleague from the user group. I would expect he would do these kinds of things."* These statements reflect the distance between the 'change project world' and the 'service engineers' world.' This seems to fit within the hierarchical and task-oriented organization context and the struggle from the change project team to communicate clearly with the change objects. In addition we observed that introducing a user group can only work when the participants in that group are skilled communicators, who are able to fulfil the intermediate role between the change project team and the regional management/service engineers.

The service engineers are the recipients of change and one of them stated: *"I don't know what is going on anymore. I hear things from my team manager and then I will do what is asked. But all the things I hear and see don't motivate me. We are not involved at all in this change process. Let them come to us first, we have to work with that PC."* In general, service engineers were sceptical and stated: *"We want the best for our customers and that things work well. But we can't work like that anymore because of all the 'expensive' ideas from HQ."* We observed, but also heard in the semi structured interviews that the service engineers perceived the change process sceptically causing feelings of resignation, in which service engineers started working around the new situation and as a result they left their Tablet PCs untouched in their car.

The intention of the change project team, in general, was to achieve the best for the organization. Nevertheless, what is appreciated as the best strongly depends on 1) the position one has in the change process (i.e., change agent or change object), 2) on the professional perceptions and 3) on the degree of actual participation in the change project. The change project team seemed to lack an emphatic attitude towards the service engineers and they did not start by listening to them, thereby taking their work conditions into account. Of course the change context was also influenced by the organization context which can be seen as a machine bureaucracy and fits with the Eiffel Tower or the machine metaphor (Ulijn and Weggeman, 2001 and Morgan, 1986) in Figure 3.5. Regarding these metaphors we observed 1) the top-down planned change approach reflected in the centralized change project team at HQ, 2) the task dominance as seen in the strong focus on technical realization of the Tablet PC, and 3) a hierarchical way of working as found in the cascading formal communication between the change project team, the region managers, the department managers, team managers and finally the service engineers. In practice, the actual change process was continually emerging and developing, but the project team insisted on striving towards a situation guaranteeing certainty.

Intentional context
The intentional context is used as an overarching concept including beliefs, perceptions, values, and attitudes. Questions about the personal intentions were asked in the semi structured interviews. Some reactions below reveal the different beliefs, perception, values, and attitudes towards the Tablet PC. The perceptions of the service engineers were expressed in statements, such as: *"I can only work with a well-working and easy to handle instrument. For me it is just one of my 'technical tools' and those have to be perfect otherwise I won't work with it,"* and *"the wireless connection is miserable, it makes this thing slow and we cannot work with the Tablet PC when we want. First we must look for a good location where the wireless connection is working."* These statements seem to point out that the change process had to start with the tasks or working situation of the service engineer (in the open, often isolated, field) instead of a theoretical idealistic possible way of working as described by the change project team. It can be assumed that the question the change project team had to answer was: what is the current situation of the service engineer's job (i.e., work content) and how can we help him, while at the same time addressing the desired situation of the organization? That should have been the start of the change project.

The perceptions of the IT developers as members of the project team were mostly expressed in separate project meetings and not in close contact with the service engineers. The statements expressing their beliefs were: *"We can never deliver an application that is working 100% correct. There will always be some 'bugs' in it which will be handled later on as issues and must follow the*

IT change process," and "the service engineer does not have to be 'online' all the time. It is possible to do the paper work later when there is a good connection. Of course this is not ideal, and we are working on that issue, but for now it works." It seems that IT developers find it quite normal that ICT tools and applications are ready to use when they work for approximately 95%. The other 5% are minor 'bugs' that will be worked out in a next software update. This way of working does not fit with the perceptions of the service engineers who ask for 100% working tools and regard the Tablet PC just the same as a wrench or pliers.

Based on these observations and reactions it is considered important that IT developers really understand the perceptions of their customers (i.e., the service engineers) in change programs where technical innovation (i.e., the implementation of the Tablet PC) is a driver for change. Early involvement of the service engineers in the change process might have given another direction in the change process.

The above-mentioned aspects are closely related to the attitude towards the use of innovative ICT instruments by the service engineers and their skill in problem solving. Most of the service engineers in this case were not familiar with the ICT tools; particularly, older service engineers (above the age of 45) did not have positive feelings about working with them. This made it more difficult for service engineers to start using the Tablet PC after a short one-day training. Although the training seemed to be sufficient at the time, after several weeks of working alone in the field with the Tablet PC it became quite clear that the training had been insufficient. Moreover, the attitude towards the ICT tool deteriorated because of the daily troubles the service engineers experienced with using the Tablet PC and the applications.

The change project members and the team managers had a much more positive attitude towards ICT. They were used to working with it all day in the office environment and could not imagine what working life would be like without this kind of instruments. Of course, this makes it even more difficult to understand the position of the service engineers, who often work in field locations or in their maintenance cars. The younger service engineers in general had a positive attitude towards the Tablet PC, whereas most of the older service engineers had a negative attitude. This difference was not sufficiently noticed by the change project team.

Based on Figure 3.5 referring to the organizational and cultural settings in Chapter 3 we can position Case 1 in the model of Ulijn and Weggeman (2001). This is based on the organization structure with at least four managerial levels in place and the communication structure during the change process using mostly formal written project documents. Figure 5.4 presents the position of Case 1.
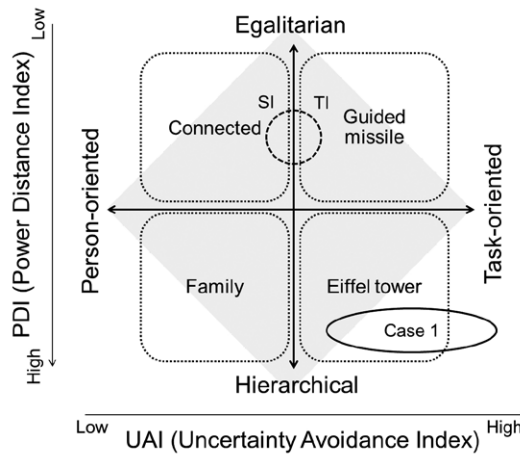
Figure 5.4 Case 1 situated in organizational and cultural settings

The organizational context can be characterized by the different hierarchical levels creating a high PDI in which the organizational culture is primarily task-oriented. Due to the many rules and regulations and the typical PC of the service engineer the UAI is high. The contextual factors in this case are influencing the interactions between change objects and change agents. The intentional context revealed some differences between the professional cultures of participants which accordingly influences the sensemaking in interaction. Next we focus on the discourse analysis performed in this study in order to focus on professional discourse, both written and oral, using the discourse analysis framework.

5.3 Discourse analysis of documents, interviews and meetings

As described in Chapter 4, we have adopted the same qualitative, with some quantification, research design for all three cases. In this case study we started with desk research by reading formal project documentation, evaluation reports, progress reports, newsletters, and other relevant project documentation that was available. We analysed four documents using *WordSmith* software and performed a word count analysis in order to find the most frequently used words in these written documents. During the case study, we also observed presentations, attended project meetings on a regular basis, and visited service engineers at field locations (e.g., informal conversations). We conducted semi-structured interviews asking mainly questions regarding the organizational and change context (see Chapter 4). Finally, we attended a regional kick-off meeting in Overijssel. The goal of the meeting was to inform the service engineers about the roll-out plan, the work processes, and to give a demonstration of the WOM application with the Tablet PC.

5.3.1 Formal project documents, lexically analysed

The formal project documents used in this case are the 1) Project Initiation Document (PID, 2009), 2) a newsletter from the Field Office Support desk, 3) a report of a User Acceptance Test (2009), and 4) a User Group Report (2009). We selected these documents in order to have different viewpoints on the same change project. The first document reflects the formal Project Plan written by project team members. The second document was written by an IT specialist that worked at the helpdesk to support service engineers who had trouble using their Tablet PCs. The third document is a reflection of several end users comments who participated in a user acceptance test. Finally, the fourth document was written by representatives from the formal user group. Table 5.1 shows the word count of these formal documents.

Table 5.1 Word count in formal project documentation

Organization documents			
Documents	Total words in document	Typical words	Frequency[11]
Project Initiation Document (2009)	6,613	Project	106
		Products	47
		Steering group	32
		IT Control	30
		Work Order Management	25
		IT Application	23
		Cost	20
		Profit	19
		Roll-out	19
		Communication	14
		Service engineers	12
Newsletter Field Office Support	802	Tablet PC	12
		Manual	6
		Intranet	4
		Update	4
		Booting Tablet PC	3
		End user (e.g., service engineer)	2
		Internet access	2
		End users (e.g., service engineers)	1

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11 In Table 5.1 percentages are not used because the words represent a selected part of the total words

Organization documents			
Documents	**Total words in document**	**Typical words**	**Frequency**
Report User Acceptance Test	2,772	Project	23
		User Group	14
		Work Order Management	13
		Test scripts	12
		User evaluation	10
		Users (e.g., service engineers)	6
		Service engineers	4
		User experience	3
		Tablet PC	2
User Group report	1,894	Work Order Management	17
		"Must" (e.g., it is a must/requirement)	13
		Inspection	10
		Decision	8
		Maintenance	7
		Order	6
		Service engineer	3

We can conclude that the formal documents use abstract words (i.e., *project*, *manual*, and *test scripts*). These abstract wordings are typically found in written documents that have often been re-written several times by the authors to strike the right tone trying to make everything as clear as possible for the reader of the document. We also see that these documents first focus on tasks and products that the change project has to deliver. This again might fit with the machine bureaucracy and Eiffel Tower metaphors in which words used are often abstract and formal. It seems that the authors are forgetting for whom they are writing these documents; is the document necessary for managerial decision making or is it also necessary for change objects to understand what is going to happen? The focus on the service engineers, being the change objects of the change project seems to be less important, which indicates that the employees are considered second best: first technology, second the employees working with it. It is also noticed that most of the service engineers were not interested in these project documents. For them the clear actions and results count instead of the nice plans on paper.

5.3.2 Semi-structured interviews with employees

We interviewed employees who had different positions and roles across the organization (e.g., project managers, consultants, team managers and service engineers in the field). The selection of the specific service engineers was made by the team managers. The other interviewees were mostly suggested by the change manager of the project. In total, 20 interviews were digitally recorded and

transcripts were made. All transcripts were approved afterwards by the interviewee. The interviews varied between 30 and 90 minutes and were mostly in a one-to-one situation between the researcher and the interviewee. In two interviews we spoke with both a team manager and a service engineer together (see also Table 8.2). The goal of the interviews was to get an idea about the perceptions of the interviewees regarding the organizational and change context. When applicable we also asked a few questions regarding the intentional context of the individual employee.

Table 5.2 shows different selected quotes from the recorded interviews within the three contexts following a sequence from positive (P) towards negative (N). We have made a distinction between the quotes of (team) managers, service engineers and consultants to explicate their different views on the contextual aspects and to demonstrate how they see the other from their own stance. Finally, we examined the quotes for their technical and/or social innovation orientation (see TI and SI marks) as described in the beginning of Chapter 1. By performing a simple count on TI and SI scores we can obtain an idea about the relationship between the role/position and the perspective on the innovative drivers for change.

Table 5.2 Quotes from interviews with managers, service engineers and consultants

Organizational context	
Managers (n=3)	**P/TI:** Things are really changing for the engineers. **P/SI:** Goals related to customers and excellent service delivery. **N/SI:** Ambiguous about change result. **N/TI:** The engineers are not used to working with these IT tools. **N:** They [*the engineers*] do not have that structured a way of working.
Service engineers (n=6)	**P:** I know the clear goals of the project. **N/TI:** The Tablet PC is difficult to use … **N:** Managers sometimes see us as little children … **N:** Engineers do not say very much in regular meetings, but afterwards, when they are with colleagues …
Consultants (n=2)	**P:** We have very clear goals and a good plan to realize the goals. **P/TI:** The main focus is on realizing the ICT part of the project. **N:** But it is difficult to align this project with all the other different change programs within the organization.
Change context	
Managers (n=3)	**P:** I am rather positive about the change direction P: I expect positive results of this change project. **P:** The communication and information is good. **N/TI:** …but I am very critical about the Tablet PC **N:** The exact role of the whole project group and the change management can be discussed. **N/SI:** We [*the management*] are in the change process just "in between." The project group tells us and we have to explain to our engineers. **N/SI:** Support and "buy in" are difficult. There are many different perspectives on how this should work.

Service engineers (n=6)	**P:** I think the direction is clear.
	P/TI + SI: This is a change in technology but it won't change our behaviour. We still do the same work!
	P: The Tablet PC is working fine. Application … is a good solution. We used to work with large drawings but now we have it all on our Tablet and it is the actual situation.
	P/SI: … the job stays quite the same …
	P: Communication and information are good …
	N: …but I am critical towards the project group.
	N/SI: Line management does not have an important role in this.
	N: Support for this project should be created but this is not done explicitly. Most of us [the engineers] have to inform ourselves by reading the intranet news, listen to presentations, and so on.
Consultants (n=2)	**N/SI:** There is not much time for the real change of behaviour for the engineers.
	N/SI: The question is if and how the engineers are involved and what kind of sense they make of this project.
	N/TI+SI: The change program is basically built upon the implementation of the Tablet PC and the applications. This fits within a strict time frame but there is nearly no time for end-users to get involved or adjust to this new way of working.
Intentional context	
Managers (n=3)	**P:** Service engineers want to understand things, know how it is working.
	P: I think engineers are critical doers, result-driven people who like variation in the job and enjoy the "freedom" of being alone "on the road."
	N: They [*the engineers*] do not believe everything directly.
Service engineers (n=6)	**P:** I like some variation in my job.
	N: I have a long working history with many ups and downs. I am not that motivated anymore.
	N: I can see that there is more tension rising between employees in the team but also between the teams.
Consultants (n=2)	**P/TI:** I believe that it is important to get a good working Tablet PC. This will increase our efficiency.
	N/TI: But about 50% of the engineers are using the Tablet PC, so we still forget about other factors that contribute to the use of IT tools.

Table 5.2 indicates that the general perspectives between the three professional groups are different. We relate these perspectives to the three contexts and possible opportunities and threats. We also counted the TI and SI scores on the quotes in Table 5.2.

Managers (n=3)
We can conclude that the managers are aware of the organizational context in which the change process takes place. They have an overall picture of the organization's goals and strategy, and they directly relate that to the service engineer and his abilities. They generally are positive about the change process, but are negative about their own role in this process. The (team) managers have

an ambiguous role in the change project. Sometimes they are involved, but sometimes they do not know what is happening. They can see the benefits but are critical about the process of change and the interaction with the project group. The opportunity for the change project is to use this positive perception of the managers in favor of the regional implementation. However, a threat for the change project is the in- between position of the (team) managers which might lead to resistance to the change and mental withdrawal.

The intentional context illustrates that (team) managers have a clear perspective on the motives of the service engineers. Most (team) managers also have an (higher technical education) engineering background, so this might be a projection of their own motives and ambitions. However, they understand the service engineer and this can be seen as an opportunity for the change project during regional implementation. We coded quotes of managers both as TI (3 times) and SI (4 times) meaning that they are aware of the fact that the implementation of the Tablet PC is not just a technicality (work content), but that it will also cause changes in the social aspects of the service engineers jobs (work context).

Service engineers (n=6)
The service engineers understand the direction of the change program but they do not really feel or experience the change. They are critical about the change and there is a distinction between younger and older engineers. The younger ones adopt this technology change more easily. In general, the service engineers believe that the change project is just another innovative tool but their way of working will not change. They do not seem to realize that their job content and behavior will also have to change. The change project is perceived as being far away and the only impact on their job is that they have to work with the Tablet PC instead of with paper. This can be seen as a threat to the ambitions of the change project because the whole idea behind implementing the Tablet PC was also to put the service engineers into a more directing role (see Figure 5.2). The intentions of service engineers are greatly related to the technical part of their work, solving problems, and helping customers. This is an opportunity for the change project because the Tablet PC will be helpful in solving their problems more easily. Working outside and having the freedom to perform the job together with their colleagues is their main motivation. Regarding the scores on TI and SI, we counted TI once, SI twice and a combination of TI+SI once. It can be concluded that service engineers are aware of the technical change when the Tablet PC is implemented, but they do not seem to realize the social innovation that goes along with this technology. The Tablet PC will change their work context as well.

Consultants (n=2)
The internal consultants focus mainly on the project goals, the project risks, and the realization of the (technical) implementation of the Tablet PC. They are particularly negative about the change context. The consultants want to involve the line management more in the project but they find it hard to do so. This can be seen as a threat for the change project for further regional implementation. Beside the technological factors of the change project the consultants are very aware of the human factors regarding the implementation of the Tablet PC, but they seem to have no time to pay attention to these soft aspects during the change process. The opportunity for the change project can be in that the consultants are willing and want to establish real change, but at the same time there is a threat in that they are only able to focus on project management and technological aspects in the change process. The consultants' intention is their belief in the long-

term benefit of this change project. They are convinced that the Tablet PC will really improve the work processes (work content) of the service engineers, but they also see it will change the work context of the service engineers. We coded the quotes of the internal consultants three times as TI, two times as SI, and we found one combination of TI+SI. This indicates that the internal consultants are aware of both the technical and social innovation of this change process. However, in realizing the project goals timely and in delivering objective results, it was also noticed that the focus on technical innovation (e.g., implementing the Tablet PC and the WOM package) overruled the discussion about the social innovation.

5.3.3 Informal interactions and participant observations

During this study many informal chats with the members of the project team were made as well as participant observations while attending project meetings, both at headquarters and in the regions. We heard the following: *"it is difficult to really implement this change," "we do not know where to start first, because there are so many projects, there are many different projects that have also impact on my projects,"* and, *"the organizational structure is complex which makes it difficult to see all the aspects related to the change projects."* Regional managers mentioned that *"the change projects are badly implemented. This is mainly because the project team cannot oversee all of the consequences of the changes and the impact in our region."* However, one regional manager also told us that *"team managers are now able to align the different projects within the organization. So they must focus on both the change and the operational activities in the team."* These informal reactions illustrate what people were thinking about this change project in particular. Everyone responded from his own perspective, based on what they saw, heard or experienced. These local interactions influenced the change patterns in the organization.

Informal conversations also took place with service engineers at various field locations while they were working. By doing this, we could see and understand under what conditions the service engineers had to work, and how their Field Office (including the Tablet PC) was used. During these informal conversations we received an impression about the perspectives of service engineers regarding the change project. First of all, service engineers generally are critical result-driven doers. They are motivated to improve their direct work and working conditions. However, this is always carried out in a practical manner and within a relatively short time (solution driven). If a tool is not working properly, then it is not beneficial to them.

The service engineers were the first to see the direct results because of their immediate contact with customers. These engineers have to hear all of the customer complaints because they are in the front line. Some beliefs stated by service engineers were: *"New tools must work 100% of the time. Technically the tools have to be perfect and we* [the engineers] *must see the benefit of them in our daily work." "We know exactly what we are doing and how our work should be done. Someone else cannot know all the details." "We focus on the details and keep all the aspects concerning our work in mind so we can come up with the best solution."*

As a participant observer we recognized these beliefs in their language. Some statements service engineers made during these informal conversations were: *"We are absolutely not involved in the change process." "They* [the consultants] *do not even know what we are doing here." "The wireless connection is miserable, it makes this thing slow." "The implementation and training is insufficient." "They* [the consultants] *should ask us on the workplace first, we must work with it."*

On a professional level, we see that service engineers think and act practically. It is almost a kind of binary thinking. Something is either good or bad; it works or it does not work. One service engineer told us: *"there is light or there is no light."* Engineers also think rather pragmatically and are pragmatic performers. If a solution works for them, it is fine. In this way of thinking, solutions must also be found within a short time. We observed a great distance between the consultants and the service engineers in the field. Project members attended the regional meetings sometimes, but they belonged to another group. They gave presentations and training courses, but they were difficult to reach if there were problems in the field. Furthermore, most of the service engineers' questions could not be answered directly during the presentations. The service engineers felt that the consultants' participation was insufficient and that they were not being heard.

During project meetings with the project members we observed quite different language usage. The discourse focused on functional elements of the change program, such as roll-out plans, IT development of hardware and software, safety, and HR training. The project members, organized in a functional way in the project group, seemed to address these topics quite isolated. In contrast, the service engineers had to work with it all together in the field. For them, a well functioning Tablet PC was the only criterion available for determining if something was good or bad. This meant that everything had to be good (i.e., the Tablet PC, the training, the wire-less connection, the field office, the applications, and the helpdesk services).

In these two perspectives (first, a perspective from the service engineer and second, a perspective from the change project team) we can clearly see different worlds of thought. The service engineers want a Tablet PC that works perfectly and supports them in their daily work, including all the other preconditions that are necessary for doing their jobs. The change project team possibly had the same goal as the service engineers did, but they work in a functional structure which might lead to a step-by-step approach towards finding an integrated solution which does not seem to be logical to an outsider (i.e., the service engineers). We can consider this situation as a gap between the actual 'work context' in which the service engineers are doing their daily work, and the 'project context' in which the change project team is working. It seems that a link is needed between this real organization experienced by the service engineers and the project organization as experienced by the consultants in order to achieve effective change results.

5.4 Discourse analysis of the formal regional kick-off meeting

In addition to the formal organizational documents, the semi-structured interviews, and the informal interaction, a regional kick off meeting was attended in the region Overijssel. We performed a discourse analysis on the data recorded during this regional meeting in which consultants, managers and service engineers were interacting and discussing different topics regarding the implementation of the Tablet PC. Attendees were the regional Maintenance and Repair (M&R) manager, two team managers, six service engineers, and two internal consultants representing the change project team. The goal for the two internal consultants during this meeting was to inform the participants about the implementation planning of the WOM application, to give a demonstration of the WOM application on the Tablet PC, to discuss the local implementation plan, to agree on concrete actions to be taken, and to listen to possible objection. The meeting started with a question and answer round, followed by a demonstration of the WOM application on the Tablet PC, followed by discussions among the participants. The consultants asked questions to

gauge the atmosphere among the service engineers and further explained the status of the change project. The managers mostly asked for commitment of the service engineers towards the change process. We might see this type of questioning as an illustration of the Eiffel tower culture and a top down technology push by the managers and consultants. The meeting's closure statement was the clear directive from the regional M&R manager to start working with the Tablet PC and to give feedback particularly to the change project team when improvements could be made for the WOM application and the Tablet PC.

The meeting was digitally recorded, transcripts were made and 38 utterances were coded using the discourse framework mentioned in Chapter 4. These 38 utterances only reflect a fraction of all spoken text, but these are considered to be crucial turns in the conversation and reflect the overall gist of the conversation. The utterances are listed chronologically in Appendix A, including the role of the participants. Although the utterances were made by individuals we clustered them together in the overall role of manager, service engineer, and consultant. The role of service engineer represents the six service engineers (Service Engineer 1 … Service Engineer 6) and relates more to the specific role than to the individual utterances. Manager represents the role that can be both the team manager(s) and the manager M&R. In this situation the three different professions involved are 1) the (team) managers, 2) the service engineers, and 3) the consultants. Appendix A shows the 38 utterances with a number between brackets behind the generic role which refers to the individual that actually performed the speech act. Note that this study does not aim to analyse discourse on an individual intra-psychic and micro level, but instead wants to understand how different discourses of professional groups interact in change programs (see also Table 3.2 in Chapter 3) as an illustration, not as a complete picture of all what has been said by anyone attending the meeting.

To analyze this data, a workshop was organized with 10 coders from the Roundabout[12] group who are familiar with discourse analysis. A presentation was given by the researcher to instruct the coders in how to use the standard coding document. The coding and inter-coder reliability is confirmed in Appendix B in absolute (Abs) and percentage (%). The highest percentage (e.g., most coders agree) is used to classify the utterance. When the percentage is equal, this is considered as a double count (see Tables 5.3, 5.4 and 5.5). The coding document was set up in columns starting with the number of the utterance (1–38), the role, and the utterance performed in the discussion chronological. After that, columns were made to score the different classifications of speech acts (1–5) and the specific negotiation strategy (non-cooperative behavior, cooperative behavior). Next the communication support could be coded (general and meta-communicative). The final columns show the four types of conversation phases (initiative, understanding, performance, and closure).

Once the coders had filled in the document, the results were calculated as fixed numbers and percentages. This combination of a quantitative method together with a qualitative method can increase the level of validity and reliability (Ulijn, 2000) and is not uncommon in the area of business communication and intercultural negotiations (see Brown and Levinson, 1987; Van der Wijst and Ulijn, 1995; Ulijn and Verweij, 2000, Ulijn and Lincke, 2004). The utterances in Appendix A and B are the same.

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12 The Roundabout is a group of experienced practitioners pursuing a PhD in the field of international entrepreneurship, innovation and culture. The group meets twice a year and discusses topics related to management, change, culture, language and communication. We would like to thank the Roundabout group for their willingness to participate in this coding workshop.

Tables 5.3, 5.4, and 5.5 give an overview of the different speech acts per professional clustered by 1) classifying speech acts, 2) negotiation strategy plus communicative support, and 3) conversation phase. We discuss our interpretation of the results mentioned in the tables below. The numbers mentioned in brackets in the text refer to the actual counted number of speech acts (items) as depicted in the tables.

Table 5.3 Classifying speech acts counted per professional role

Speech Act	Manager (n=3)	Service engineer (n=6)	Consultant (internal) (n=2)	Total
Assertives	9	10	1	20
Directives	2	4	8	14
Commissives	1	1	1	3
Expressives	1	5	-	6
Declarations	-	-	-	-
Total = >> minus 5 double counted				43[13]

Table 5.3 shows that managers (9 items) and service engineers (10 items) mainly use assertives in their communication during the day. Assertives are defined as claims or statements supportable by evidence (i.e., true or false statements, judgments, evaluations, and opinions). This can be recognized in the verbal behavior of service engineers when they argue about their work. These discussions are usually quite dichotomous and arguments in favor or against are discussed at the extremes ends of a scale and can be seen as black and white arguments. For example, when presenting the work processes in the WOM application only high level process steps were discussed by one of the managers. For him this was a workable level of detail, but the service engineers mentioned many other detailed steps that were not presented in the flow chart. A discussion started in which service engineers asked for detailed information and one of the internal consultants could only guess what might be the correct answer. His intention was not to go into all the details, but for the service engineers that is what their work is all about.

The internal consultants mainly use directives (8 items) in their communication. Directives are defined as requests for someone to do something (e.g., invitations, instructions, orders, and commands, to get the work done). This is in line with the role of most consultants who do not have a formal hierarchical role, but who can only facilitate and make requests in the preferred direction. The consultant is also seen as the one who sets the direction and who knows how the new way of working will look for the service engineers and what actually will change for them. When the consultant cannot give detailed answers to the questions or arguments from the service engineers, the service engineers will not directly adopt the changes as planned. This might be explained as resistance to change from the consultants' point of view, but not from the service engineers'

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13 The total number of codes (43) is higher than the number of actual utterances (38). Some utterances were coded with more than one speech act. This explains why the total amount counted is higher than the 38 speech acts. See Appendices A, B and G for details.

perspective. The service engineers feel as if they have not received satisfactory answers to their questions, which is valuable to them in carrying out their work.

The service engineers also used some expressives (5 items), which are defined as the expression of an affective state (e.g., express a worry, an apology, or a wish). These expressions also indicate that the change context gives ground for many discussions; unanswered questions logically followed by expressions of worries. No one uses declarations, beginnings, and endings that create new conditions. This is quite serious as no actual progress is made this way during the conversation. Resistance to change might even be fueled by the change project members themselves without being aware of it.

Table 5.4 Negotiation strategy and communicative support counted per professional role

Negotiation strategy and communicative support	Manager (n=3)	Service Engineer (n=6)	Consultant (n=2)	Total
Non-cooperative	1	6	-	7
Cooperative	5	4	2	11
General	5	7	7	19
Meta-communication	3	2	1	6
Total = >> minus 5 double counted				43[14]

In Table 5.4 the negotiation strategy and communicative support per professional are given. The non-cooperative strategy is used when wordings or utterances are used, for example to criticize, deny, disapprove, object, reject, and show irritation. The cooperative strategy uses utterances, for example, to admit, approach, be forthcoming, confirm, inspire confidence, emphasize cooperation, and show goodwill.

In this particular case, the service engineers show a mix between cooperative (4 items) and non-cooperative (6 items) strategies. The managers show a more cooperative (5 items) style versus a low non-cooperative (1 item) style. In our opinion, this means that the service engineers are still worried and not completely satisfied with the change context at that particular moment in time, because they did not receive satisfactory answers to their detailed questions. These responses might indicate that there is a resistance to change, but when seen from the service engineers' perspective, it only shows their involvement and critical thinking, in which they would like to seek the best solution. The consultants do not use the non-cooperative strategies at all, which of course is obvious because they are the champions of the change project. What is also interesting is the relative use of the general communicative support by all three professions. The managers, service engineers, and consultants respectively use the general communicative support (5, 7 and 7 items) in which they ask

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14 The total number of codes (43) is higher than the number of actual utterances (38). Some utterances were coded with more than one negotiation strategy or communicative support. This explains why the total amount counted is higher than the 38 speech acts. See Appendices A, B and G for details.

for understanding, confirmation, and information, but they also explain, request, stipulate, and suggest. In this meeting it was obviously necessary to become attuned and to work hard to gain a better understanding of all the ins and outs of the change project.

Table 5.5 Conversation phase counted per professional role

Conversation phase	Manager (n=3)	Service Engineer (n=6)	Consultant (n=2)	Total
Initiative	1	6	2	4
Understanding	8	16	6	30
Performance	6	3	4	13
Closure	-	-	-	-
Total = >> minus 9 double counted				47[15]

Finally Table 5.5 shows that service engineers use many utterances that relate to the understanding (16 items) of conversation phase. Understanding is defined as utterances in which claims, evidence, beliefs, and feelings are explored (Ford and Ford, 1995). However, for the managers and the consultants, this meeting is also used to gain a better understanding (respectively 8 and 6 items) of the real-life situation and how that fits with the intended change project.

The managers and consultants use the performance phase the most (respectively 6 and 4 items). This means that these professionals want to produce a specific result at the end of the meeting. This can be explained by their formal positions as hierarchical manager and consultants, who are thus responsible for progress and change results. The service engineers are still in the understanding phase. From their perspective the intended change has not been accepted yet. Before committing themselves and using a performance style in their utterances they really want to see more questions answered. Finally, no one uses the closure phase which is according to Ford and Ford (1995) an important step in the conversation phases to leave the event behind and continue from that point on with future actions.

Interventions (i.e., the regional kick-off meeting) are always one time moments in a change process. The formal and informal conversations and the overall atmosphere during such an intervention are framed in the minds of the participants and when the next intervention is planned they will clearly remember their previous experiences. Therefore interventions are unique and a one-time opportunity for the consultants which has to be good.

In addition to the formal utterances produced in the regional kick-off meeting also informal discussions took place during coffee breaks, at lunch time, after the meeting and even an email discussion between one of the consultants and a service engineer using the WOM application followed a few days after the kick-off meeting. The quotes below illustrate the different worlds of thought based on an email conversation:

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15 The total number of codes (47) is higher than the number of actual utterances (38). Some utterances were coded with more than one conversation phase. This explains why the total amount counted is higher than the 38 speech acts. See Appendices A, B and G for details.

Service Engineer: *"After the demonstration of the WOM application I realized that we have to work according to a lot of different procedures* [engineer mention detailed procedures and refer to manuals]*. These procedures are not in line with the vision and values to be realized in the project; freedom, self-supporting and cooperation. I do not think these values are realistic considering the regulations we have to stick to."*

Consultant: *"Thanks for this reaction. I did not want to go into this discussion during the demonstration session. However, we are quite busy to take seriously your concerns and those of many others. I want to ensure that you are the one always responsible for the job and that we do not want to interfere with the regulations. But I want to point out that the vision of the project and the values are important in our work in the future."*

Service engineer: *"OK, your answer sounds good, and I still believe in this project but I must say your presentation was very IT related. Many engineers have no experience with PCs and they did not understand much of your presentation. We have to keep them* [the service engineers] *motivated. Their trust in this new technology is still far away. Personally I am positive about this development, but in this idealized way of working there are too many expectations. Not every service engineer has this kind of self-starting initiatives, so welcome in the real world I would say."*

These quotes illustrate that the service engineer has to work according procedures and regulations which are one way to reduce uncertainty for the service engineers (see Hofstede's dimension on Uncertainty Avoidance Index: UAI), but also imply a fear of new technical innovations, such as the Tablet PC. These aspects are important to address in training sessions and discussions. Ulijn and Weggeman (2001) state that for the PC of engineers the UAI is even higher than the NC scores of Hofstede for the Dutch. This implies for this case that 1) the service engineers have to adhere to the many rules and regulations while working in a hierarchical and task-oriented organization structure, and at the same time 2) be self-starting, take their responsibility within freedom and find new ways to cooperate.

If we analyze how the consultant and the service engineer's interaction develops in this short email conversation it seems that the engineer starts from an egalitarian point of view (low Power Distance Index: PDI), we both learn in an innovative organization. The service engineer sees a conflict between the long term organization vision and the formal procedures that need to be pursued. The consultant reacts in an avoiding way (high Uncertainty Avoidance Index: UAI), saying *"let us not deal with this conflict now."* The service engineer in turn, does a last bid and calls for his colleague service engineers playing the good guy (himself) and the bad guy (his colleagues). Both are aspects of a low PDI and a high UAI of the service engineer. He wants to fix the problem now, which reflects a high problem-solving mood, typical of the service engineer. If we combine this with the speech act analyses performed earlier, we can then see the service engineer using assertives (claims and statements) and the consultant using expressives (a kind of apology) and implicitly also directives (getting the change work done).

The consultant, such as in the above example, might learn from this that at the implementation stage of an innovation, such as a Tablet PC, a high PDI and a high UAI are important to take into account. This fits within the Eiffel tower and machine bureaucracy of this case with a high PDI and UAI. Combining this with granting more space and freedom for the creativity of the service

engineer to find solutions to the full satisfaction of the client apart from overly strict regulations of WOM applications requires just the opposite; a low PDI and a low UAI. Beside these cultural aspects also the organizational and change context influences the work with the Tablet PC. However, the PC of the service engineer and his creative problem-solving potential will certainly provide opportunities in favor of the service engineers' work.

5.5 Summary and conclusions

The findings and conclusions are categorized according to the subquestions of this study as described in the Chapter 1. Based on the findings of this case we give our first preliminary answers, knowing that Cases 2 and 3 will give additional insights.

The first subquestion in this study focused *on the organization and change context.* We can conclude that Case 1 is hierarchically organized and strictly functional, thus affecting the change process because it sets people at a physical distance making cooperation, coordination, and communication difficult. The dispersed regional and hierarchical structure of the organization made it difficult for the change project team to cooperate with the regional management and the service engineers. This was also seen and heard in the conversations when the managers, consultants and service engineers had meetings, such as the regional kick-off meeting. Quotes (see Section 5.3.3) like *"the organizational structure is complex which makes it difficult to see all the aspects related to the change projects"* and *"we are absolutely not involved in the change process"* and *"They* [the consultants] *do not even know what we are doing here"* clearly show the consequences of the organization context. We can conclude that the organizational context influenced the interaction and sensemaking dynamics and thus might affect the change result.

The change context in this case can be seen as a top down rational process which made it difficult for the service engineers to get involved. If we take a closer look at the change program attention is given to the objective, measurable, and planned interventions. This seems to be a result of thinking about change as a well-planned, and manageable process and fits with the top down planned change approach. The innovative driver for change in this case was both technical and social, but due to different problems during the change process focus shifted more towards the technical aspects and implementing a good working Tablet PC including the WOM application. This was also seen as an *'conditio sine qua non'* for the service engineers who only wanted to work with a 100% perfect tool, not always realizing that this Tablet PC would also change their job and way of working.

Furthermore, the overall strategic plans, goals and directions of the management were not the main focus of the service engineers. They were concerned if they could still perform their work, and wanted to know how the Tablet PC could be of any help, but are not interested in the abstract project documents. Thus, there is a gap in attention between the managers and the service engineers regarding the importance of the change project. This is known in the change management literature as 'what is in it for me', which implies that management should really pay attention trying to understand the position of the change object.

Another conclusion regarding the change context refers to the participation and involvement of the service engineers, which was limited due to all kind of organizational restrictions. The key user group

of representative service engineers should have filled this gap, but they were mostly not skilled enough in performing this intermediate function between the change project team and their colleagues as end-users. Moreover, the regional management was not really involved during the change process. This means that from a receiving perspective more or less no one from the change project group actually listened to the end-users, or at least the end-users had the feeling that they were not being heard.

The second subquestion refers to *the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants*. We found that the professional culture of the three professional groups strongly relates with the role and positions they have within the organizational or change context. The managers and consultants in this case had a positive perception about the Tablet PC and the WOM application, that it would be beneficial for the organization and the service engineers. The service engineers themselves were not that positive at all about the change process and the Tablet PC including the WOM application. This is a well-known phenomenon in traditional change management literature where the change agents (senders) and change objects (receivers) are mostly seen as two parties in which the change agents have to convince the change objects (Burnes, 2009).

As expected and in line with the PC and PD of the service engineers the change project focus was mainly on technical topics such as: application design, use of proper (ICT) technology, training to learn the WOM application, and project management aspects (time tables, deadlines and deliverables). Within the project there was less attention for the social function of matching the expectations of service engineers with those of the project management. The consultants were sending their message, but not actually communicating and listening to the service engineers (the receivers) because they were lacking their technical knowledge. During the interaction and in the conversations consultants and management had little understanding of the intentional aspects of the service engineers. It seems that different beliefs and assumptions arising from the different professional backgrounds might be the causes of the misunderstandings. The discourse analysis clearly show these differences in professional culture and discourse which might indicate that people drifted apart during the kick-off meeting. The awareness of differences in professional culture and discourse of participants should have closed the gap, but it did not in the end.

The service engineers see themselvers as critical doers, result-driven employees that pragmatically want to solve problems for the customer. They are the change object, but sometimes they are not entirely involved in the change process. It appears that the managers and consultants expected that their monological communication approach would work, but service engineers want to understand, ask critical questions and when no desirable answer is given they do not buy the story. Managers and consultants often frame this as resistance to change, but in fact the service engineers want answers to their detailed questions. The service engineers are used to think critically, analyse and diagnose technical situations in their job in order to find solutions and solve the problem. It seems that the managers and internal consultants are less empathic towards the service engineers, but they should be able to step into the shoes of the other party. Change processes in which service engineers are involved have to start with the present tasks of these service engineers and how to improve that together.

Our third subquestion states that *possible differences between PC and PD of the three professional groups might be a cause of resistance to change*. In this case we observed a lot of resistance to the change among the service engineers. For the older employees this was mainly caused by a certain kind of fear of working with the Tablet PC. The change project team did not anticipate this at all and developed a one-day training for every service engineer, while older employees needed more

support. Furthermore the consultants were not able to answer detailed, sometimes also technical, questions of the service engineers which caused distrust and increased the distance between them from HQs and us from Region X.

The fourth subquestion tries to understand *how cultural context factors, such as the interaction between OC and PC affect organizational change*. In this case description different contextual factors were taken into account because they might affect the change process. Case 1 is considered to be an Eiffel Tower culture with estimated high scores on UAI and PDI. The differences in PC of service engineers, managers and consultants seems to strengthen the polarity in the organization. The interaction between OC and PC certainly affected the organization change process in a negative manner.

We found that the internal consultants, who represent the change project team, are above all positive. However, they are sometimes frustrated by the contextual aspects and focus on the hard and measurable project goals, although they know that the soft, human change aspects are important as well in achieving the change goals. The managers are mostly positive and can see the overall benefits for the organization. But they are also in between the change objects (i.e., the service engineers) and the change agents. Their role is crucial for realizing the change goals because they can leverage between the change project members and the service engineers. In this case it seems to be a problem for the change project group to involve the regional management in a sufficient manner which is crucial for creating commitment among the service engineers locally.

The fifth subquestion wonders if *Discourse Analysis (DA) can be useful to understand organization change result*. At this moment, with only this limited data and one case, this question is hard to answer. The DA performed gave useful insights in the specific words used in this Eiffel tower culture, and the utterances coded illustrate the differences in professional discourse. Furthermore, the DA made clear that in this case the closure phase in the conversation was not established (see Table 5.5), which means that the participants did not ended the interaction process and determine how to proceed. Based on these first findings we conclude that DA can be useful to understand the interaction dynamics between participants in organization change. However, the data of just one case limits the generalizability of findings at this moment, the sample sizes are small, and it might be discussed why and how utterances are selected. Nevertheless, the combination of methods (semi structured interviews, document analysis, discourse analysis and participant observations) seems to broaden our understanding of professional discourse and how it affects change processes.

The final, sixth subquestion asked if *DA can lead to additional insights concerning the interaction between OC and PC as to benefit TI and SI.* For this case we categorized some utterances quite rudimentarily as TI and/or SI. The implementation of the Tablet PC is a technically driven change, and it can be questioned if it must be seen as a technical innovation. We found that the technical focus during the implementation of the Tablet PC certainly can be considered as objective, rigorous, and rational and was expected to fit within the engineering culture.

The professional culture and discourse of managers and consultants is less technically oriented. They seem to see the organizational risks and benefits of the change program and might be able to balance between the technical and social aspects in the change program. However, the service engineers seem to force the managers and consultants into a technically driven conversation striving to push the engineers' professional discourse forward and central in the conversation. This might

even have decreased the attention on the social factors. During the interaction with the service engineers, both managers and consultants are becoming more acquainted with the technical field of the service engineers which is necessary to establish mutual understanding. Finally, the implementation of the Tablet PC can be seen as an technical innovation although it can be disputed whether or not this is a real innovation or a technical improvement optimizing work processes. Nevertheless, the attention in the change process was mainly on TI as found in Table 5.2.

Measurement of the change result

Last but not least we tried to make a final account on the change result three years after the organizational change project with some of the key players. As described in Chapter 2 three criteria were used (time, budget and performance) to evaluate the overall change result. On December 11, 2013, three years after the change project, an evaluation session was organized with the former Project change manager and two team managers. One of the team managers was also participating in the key-user group at that time. The most important conclusion after nearly three was stated by all three stakeholders; *"We really made a shift in working in a digital way, using the Tablet PC and the software. Until today we still further improve the software and expand this by using apps on our mobile phones. Today all the service engineers are working with the Tablet PC and we think our employees do not know how to perform their work without it anymore."* The team managers mentioned that *"this development will never stop, we will keep improving the software and our work processes."* However, the project change manager also stated that *"the project realization took perhaps twice the time that was initially planned, perhaps exceeded the initial budget several times, and required much more resources. Nevertheless, we have made a real transformation."* Initially the project business case calculated a reduction of back office employees in every region since service engineers would have to do their own administration. However, now three years later these employees are still working in the organization, but doing other work (i.e., analysing data, validation). Overall the three key players are now satisfied with the change outcome.

The change process itself at that time was considered difficult by the three stakeholders. The team manager mentioned that *"in general the software and ICT caused many difficulties during the implementation."* The software was tested by the IT professional, and released, although it was not working 100% perfect. For the IT professionals this is a common way of working, but the service engineers were sceptical and distrusted the Tablet PC in the beginning. This is a dilemma in most ICT related change projects (see also Chapter 6). On the one hand, service engineers want to have good tools and keep on modifying it until it is technical perfect. On the other hand managers want to proceed in the change process, but have to compromise. They have to balance between change progress and user acceptance. In retrospect the above seems to comply with the DA before (see Section 5.3). This analysis disclosed the absence of (change) results in the written documents plus any attempt to close an interaction. This final feedback with some of the key players three years later indicated that they saw positive elements making the change effort after all plausible.

The positive aspect of this case is that service engineers and others confirm their intention to perform and succeed in their change efforts towards a technical innovation by using the performance phase in the communication the most (see Table 5.5).

After describing this first case it is important to relate these findings to the existing literature. What is already known in the literature and what is different to this case? In Chapter 2 many reasons were given for success and/or failure of change, such as; sense of urgency, powerful coalition, having a vision, buy-in communication, anchoring changes in the organization culture, long term wins, and actions to make the change stick. This case illustrates that none of these quite abstract factors are considered relevant by the change objects. Of course the focus in this study is on professional discourse and culture interaction, and perhaps therefore these factors found in literature are not visible to the researcher. Nevertheless, we think that reasons for the success and/ or failure of change process must be found on the level of (local) interaction and sensemaking between participants instead of on the abstract strategic level. During the interaction it is important for all participants to be sensitive to implicit assumptions that might be based on their professional culture. The role and function of language (see Chapter 3) illustrates the strong influence of our own professional discourse, without questioning that of others.

The change process in this case is a top-down and planed approach, and the change project team communicates according the sender-receiver model. Both theoretical approaches are well known in literature, but are quite out-dated. The theoretical emergent change perspective using a dialogical form of communication is known in literature. For practitioners perhaps it is difficult to start within the constraints of a hierarchical and task-oriented Eiffel Tower organization culture. Case 1 illustrates that these contextual factors are leading to change failure and it might be necessary for future managers to get acquainted with the more recent insights about change and also to take psycholinguistic aspects into account.

Communication is often described in literature from a representational perspective. Nevertheless, for understanding interaction and sensemaking dynamics a conversational perspective would be more useful, because not every word (i.e., stakeholder analysis) or statement creates the same meaning among all participants.

Chapter 6
The implementation of an aircraft maintenance system in a low-cost carrier organization

The case situation in this chapter[16] differs from the one discussed in Chapter 5 with regard to its organizational context and the shared coherence that can be found in the professional background of the employees. This case was chosen for two reasons. First, it provided us with an information-rich setting in which professionals at different organizational levels (i.e., management, staff, shop floor) could interact during a change process. Second the organizational context and professional background of employees in the different organizational levels differed from the case in Chapter 5. By doing this we could gain more insight into the differences in discourse styles used by theprofessional groups having quite a similar professional background, and we could discover how that would affect the change process. Furthermore, the service engineers are seen in both cases as a comparable factor in this study. This case study involves a centralized organization whose employees have a similar technical background (i.e., aircraft engineering), although their level of education differs as some of them are university graduates and others completed secondary technical school. It is assumed that this shared professional background might have a positive influence on the change process. In Chapter 5 we noticed many reasons that influenced the change process related to the organization context (e.g., machine bureaucracy and decentralized regions), change context (e.g., rational and planned top-down change approach), and language differences between the managers, consultants and service engineers. Here, we expect a more coherent professional culture, namely the aircraft engineering culture. The change context is related to the implementation of an ICT system (TRAX[17]) for aircraft, Maintenance Repair and Overhaul (MRO) within the Technical Department (TD) of a European low-cost airline.

In this case we use the similar interview items (See Table 4.6) and discourse framework (see Table 4.8) to investigate language usage among participants and how it affects change. The expected difference with the previous case might be the more identical professional background of the participants. It is assumed that this can have an positive influence on the cooperation and communication of the participants during the change process.

Section 6.1 describes the case background and focuses on the organizational, change (i.e., the implementation of TRAX) and the intentional context. Section 6.2 deals with the discourse analysis on formal project documents, semi-structured interviews, informal conversations and observations, and speech act analysis. These methods (see Chapter 4) are similar to the discourse analysis performed in Chapter 5. Section 6.3 focuses on the interaction processes in relationship to typical language usage of professional groups. Finally, Section 6.4 answers the subquestions, presents the conclusions, and summarizes this chapter.

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16 This chapter has been based on Pieterse, J.H., Caniëls, M.C.J., and Homan, Th., (2012). Professional discourses and resistance to change. *Journal of Organizational Change Management.* Vol. 25(6), 798-818.
17   TRAX is name of the supplier of the Maintenance Repair and Overhaul system (see www.trax.aero)

6.1 The implementation of TRAX for aircraft maintenance engineers

In order to obtain an understanding of the situation, we describe the organizational, change and intentional contexts for the case background starting with the organizational context. The organization operates from Schiphol airport, and from smaller regional airports in the Netherlands. The company owns 30 aircraft and this number is increased to 36 - 38 aircrafts during high season by leasing from other companies all over the world. These leases are branded into the company-specific standard before high season and are re-branded afterwards into the standard aircraft configuration of the formal owner. Most aircrafts undergo regular maintenance at Schiphol airport. Heavy maintenance is scheduled for some of the aircraft during low season and performed by an external company occurring approximately every 5 years. This implies that during the year the technical department is responsible for preparing, scheduling and maintaining aircraft.

The commercial department of the company schedules the various destinations and availability of aircraft during the high season and fills in certain time slots for maintenance during the day or evening. This strict scheduling of maintenance makes the new MRO system very important for timely maintenance and can be seen as a strategic choice. The change project for implementing the MRO system had already started when the TD manager invited an external consultancy firm to provide support during the change project. His main concern was the expected resistance to change within his organization as a consequence of the MRO implementation, which he formulated as follows: *"I think the physical implementation of the system will not cause trouble, but I am not sure about the mental implementation. I think we need some help on that part, because we are not good in that."* This remark made by the TD manager provided the reason for starting an investigation into possible differences in professional discourse and exploring how this might possibly fuel the resistance to change which could ultimately affect the change result. The following section provides an overview of the organizational, change, and intentional context.

Organizational context
The organizational context refers to the characteristics, both tangible and intangible, of the organization as described in Chapter 4. The company has an average number of 1,766 employees, who are mainly employed as cabin crew. The MRO department has a total of 213 employees, who work primarily in three departments: Aircraft Maintenance, Engineering and Purchasing & Logistics. Approximately 140 of them work as aircraft service engineers in a hangar or on the airfield/flight line. Daily maintenance is performed on the platform (pre-flight and through-flight inspections) and in the hangar (preventive and corrective maintenance). The service engineers in the hangar work in shifts (day, evening and night) from Monday to Friday.

Most of the employees who work in the technical department have an educational background in aircraft engineering. Their education varies from having studied at university (aerospace technology) to having completed secondary technical school (aviation engineering). This shared professional culture might prove benificial during the change process.

Despite the current economic slowdown, the airline company is operating successfully. The organization's technical department is based on the structure as shown in Figure 6.1 and shows that at least three managerial levels are in place.

Manager Technical Department

Project Management Maintenance Control

Staff

Manager Purchasing & Logistics

- Purchasing
- Store / Logistics

Manager Aircraft Maintenance

- Maintenance Planning & Support
- Technical training & tooling
- Teams (1-7) Aircraft Maintenance
- Seat shop

Manager Engineering

- System Engineering
- Document Center
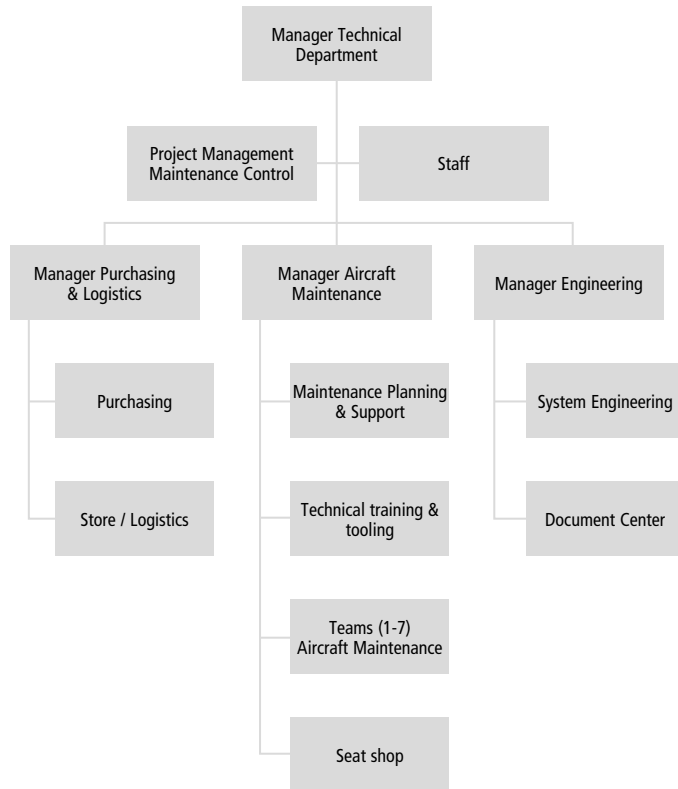
Figure 6.1 Organizational structure of the Technical Department

The aircraft engineers can be characterized as being task-oriented but the cooperation at both the vertical (i.e., management – employee relationship) and horizontal level (i.e., employees of different departments) can be characterized as egalitarian. Although strict maintenance manuals had to be enforced, both the management and aircraft engineers were innovative when aircraft availability and time slots were tight and hard-pressed. It was the aircraft maintenance engineers, who had to fix the technical problems within a set time and who had to deliver a safe aircraft to the commercial staff. Aircraft safety always has the highest priority, but it is sometimes difficult to stick to the agreed punctuality performance. The dilemma between punctuality and aircraft safety constantly calls for the innovative problem solving by the aircraft engineers and the management of the TD. The manager of aircraft maintenance (AM) stated that *"the MRO system could prove to be quite useful in gaining better insight into the best way to improve punctuality."*

We can conclude that the centralized organization context and the probably coherent professional culture can be a reason for a lower estimated power distance index (PDI) between managers and employees and a lower uncertainty avoidance index (UAI) when related to the change process because participants are willing the help each other within the egalitarian organization culture (see also Figure 3.5). This organization and culture setting might create opportunities to be more innovative during the change process, and at the end realize successful change results.

The change context

The change context refers to the characteristics of the change approach and the degree to which the organization changes to meet internal and/or external demands as described in Chapter 4. This was explained during the semi-structured interviews held with employees. In 2007, the change project started with the selection process for a new MRO software system. The need for a new ICT system had emerged when the supplier of the existing application could no longer support it. The change project, now called MISTRAL, was realized by a project group which consists mainly of two streams, namely the business project stream and the ICT project stream.

In this change project the following professional groups participated: (1) end users of the new MRO system, (2) super users who were delegates of the end users and responsible for the development and testing of the ICT system, and (3) (project) management, responsible for the overall implementation. The super users consisted of employees working in one of the three departments within the TD.

The ICT component of this project was dominant, so employees of the ICT departments formed an important part of the project team. Their responsibility was to accomplish all ICT-related work; such as building the system, testing software, developing interfaces and preparing data conversion from the former to the new system. The business stream was responsible to make their acceptance criteria clear and perform the necessary testing before accepting the system indicating that it is ready for production and implementation. The ICT stream was responsible for the IT related technical settings of the system and database.

The business team consisted of a group of approximately 30 aircraft service engineers who volunteered (becoming the super users) to join the change project, and who represented their colleagues (being the end users) in the change project. They were all familiar with the daily work routine and practical issues so their background and work experience would enable them to define the appropriate acceptance criteria, to give adequate feedback on the test versions of TRAX and to approve the production versions before implementation. Finally, this group of super users fulfilled an important role in communicating the change project developments to their colleagues (the end users) internally by talking and explaining what they were doing. In the final phase of the project every team had access to TRAX with a guest-account and the super user could explain the new system, give demo's, and answer questions of his co-workers. This part of the change approach can be seen as a form of bottom-up input from the experienced aircraft service engineers while at the same time, the TD management team determined the general direction and time line of the change project.

The General Project manager was responsible for both the business and ICT streams, which had been delegated as the responsibility of the Business Project manager, on the one hand, and the ICT Project manager, on the other. The General Project manager reported to the Project Board in which the TD Manager and the Manager of Engineering had the final say. The change project team hired a TRAX representative, who was responsible for the detailed system settings in the new MRO software and for trouble shooting. This part of the change project can be seen as the top-down input from a managerial level, whereas the bottom-up input from the experienced aircraft engineers could also be used. Together, when both inputs are combined, this change project can be characterized as a planned top-down and bottom-up change approach in which the project team

constantly developed the MRO system by discussing and testing the features of the system and linking them to the work processes.

The whole change project team worked together in a friendly and cooperative way, and the relationships between the General project manager, the Business project managers, and the super users were relatively good. Perhaps this was because employees worked for quite some time within the TD and knew each other quite well. Nevertheless, there were also tensions between employees and managers, and between employees on different departments. It was remarkable that most employees could mention the names of the most critical employees in the organization. The cooperation between the General project manager and the ICT project manager was more stressful due to the fact that the implementation of TRAX was just one of the many other ICT implementations that the ICT project manager was responsible for. The ICT department was responsible for all ICT-related work within the whole aircraft company, and the fact that it was located at the other side of Schiphol airport created a kind of physical distance between the operations in the TD and the headquarters. Figure 6.2 shows the overall project structure of the change project team.
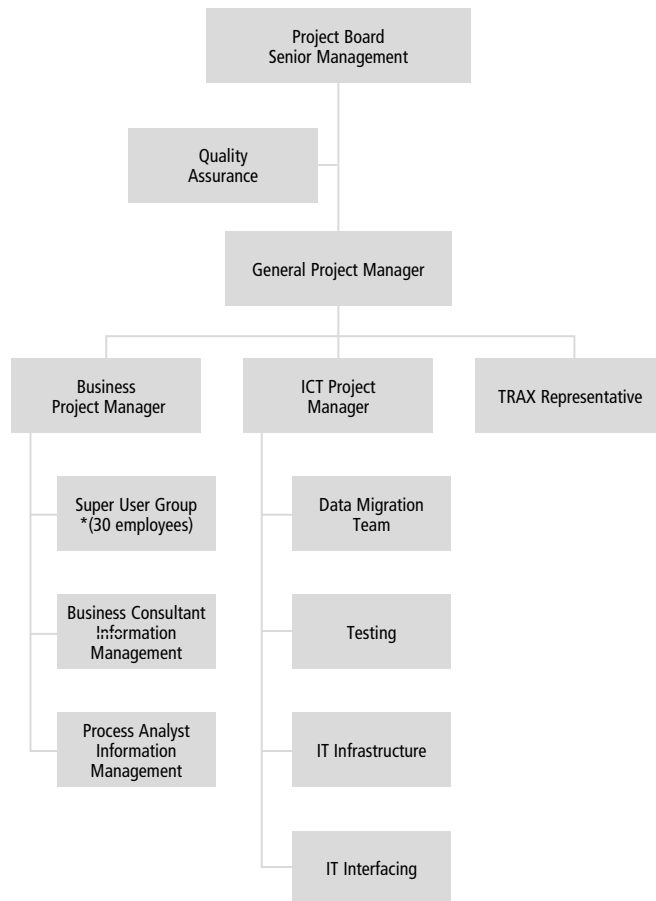
Figure 6.2 Formal project structure of the MISTRAL project team

The effect of this cooperation on the change process became clear during the testing of TRAX, for instance when an ICT test environment had not been installed or had been set up without the correct data. However, these issues were often resolved without having them escalate and having to present them to the project board for review.

In 2007, the selection of the new MRO application started, and in January 2008 the change project team had been organized to select a new system for the TD. The project group represented the three main departments (Aircraft Maintenance, Engineering, and Purchasing & Logistics) within the TD. It did the initial mapping, design and construction of a test environment, and finally, developed the training courses. In September 2008, the system testing was finished, followed by the acceptance phase in which the business, which also included Aircraft Maintenance, Engineering, and Purchasing & Logistics, was involved. Their involvement increased even more during this test and acceptation phase, because in that period, which extended to the three months at the end of 2008, the super users also developed training material, presentations and organized training schedules for about 200 end users, which in fact were their direct colleagues. The application was to go live on February 1st, 2009. The external consultancy firm had been involved in the change project since September 2008 when the TD management experienced serious resistance to the change process by employees, and started doubting the chances of a successful (mental) implementation.

Note that historic events might have fuelled this resistance to change, because two years earlier a reorganization program had offered several employees other, less interesting jobs. These painful experiences were still resonating throughout the organization, and this could very well have had an influence on the change result.

In the change process for the MISTRAL project some generic rules that underpin the way of working together and the responsibilities of the different employees involved are used. These basic rules were: 1) each department in the organization is responsible for the functional implementation of the new MRO system within its own department, 2) the implementation is supported per department by implementation coordinators, 3) the training will be done according to a train-the-trainer concept, 4) the MISTRAL project will coordinate, facilitate and support the business with implementation, and 5) the project is responsible for a proper working ICT system and environment (data migration, interfacing, test -, acceptance - and production environment) that is accepted by the business. The train-the-trainer concept means that aircraft service engineers would train their direct colleagues. For many service engineers this was a huge challenge because they were not used to working with presentation software (e.g., Powerpoint) and they hardly had any didactical skills. The change project structure clearly divided the project into two streams (e.g., business and ICT) and ideally both should combine at a certain point in time when the User Acceptance Test (UAT) and the training sessions were due to be planned (November and December 2008). The formal written project documentation was limited and the project team preferred face-to-face communication in both formal and informal settings.

The intentional context

The intentional context refers to the non-overt, implicit assumptions of individuals and the way these are expressed in their motivation as described in Chapter 4. During the participant observations and interviews we frequently heard the employees mention how much they enjoyed working for this low-cost carrier because of the sense of family it gave them. This family culture represents a hierarchical person orientation according to the Ulijn and Weggeman's model (2001).

We recognized a more egalitarian culture within the TD. The TD is a rather small part of the aircraft company, that works on a clear product (aircraft maintenance) and which is centrally located at Schiphol East. All of the employees have a great affinity for aircraft and maintenance, and some of the employees themselves are pilots of small one-engine aircraft and they often fly in the weekends. During the interviews, the employees mentioned that they share a *"we-feeling"* and that they had a *"green heart"* thus referring to the green logo of the company. Employees feel at home working for the low-cost carrier and have more freedom in their work compared with other larger aircraft companies located at Schiphol. Since employees experience their job characteristics and responsibilities as being more integrated, this might lead to more involvement, and an enriched work environment. Some of the aircraft service engineers remarked that they had worked before for another aircraft company which paid more money, but after a short time they had decided to return to their current employer because aspects of the job had been less interesting and not worth the additional pay.

These impressions, gathered during the semi-structured interviews and informal conversations, show that the employees are very involved and that they enjoy their work. Figure 6.3 positions this case in Ulijn and Weggeman's model (2001) showing a task-person oriented organization that clearly adopted a planned change approach using a strict project management structure in an egalitarian cooperative way of working. The Uncertainty Avoidance Index (UAI) is medium to high because of the aircraft safety, strict governmental procedures and detailed maintenance instruction that must be followed. However, the trust among employees and the close relation with the management also minimalized this uncertainty culture, making it possible to work together in a constructive manner to realize the change. Moreover, the observations showed also a medium Power Distance Index (PDI) because the relationships between managers, project managers and employees were rather friendly.

Based on the organization structure depicted in Figure 6.1, and the organizational culture found in our participant observations the TD can be seen as an adhocracy. This refers to an organization that takes advantage of opportunities, solves problems, and obtains results. According to Mintzberg (1983), an adhocracy is a complex and dynamic organizational form and can be very good at problem solving. In the framework used (see Figure 3.5) we can place this organization in the center, between hierarchical and egalitarian. Having a stronger task orientation instead of a person orientation the organization is placed in the upper right quadrant as an guided missile.
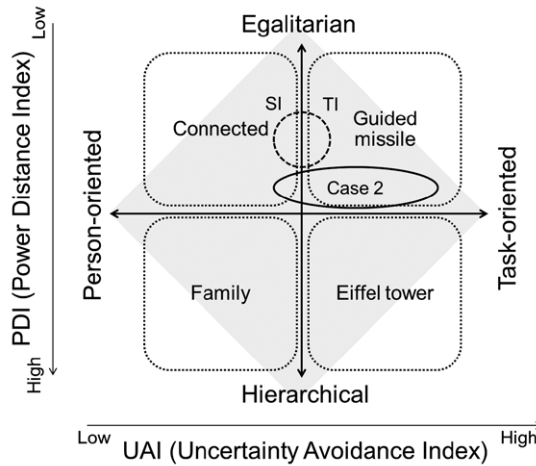
**Figure 6.3 Case 2 situated in organizational and cultural settings
(adapted from Ulijn and Weggeman, 2001)**

It can be concluded that the organizational context is ideal for this particular change project, due to its centralized organizational structure with three managerial levels in place. A relatively small number of employees are well aware of why the new MRO software needs to be implemented. The change context is very pragmatic, although a strict project plan with clear deadlines and communication structures is followed. The change project team consists of experienced aircraft service engineers for the business acceptance, whereas the ICT stream is staffed by internal staff employees. The external consultancy firm only facilitated the super user group in their work as train-the-trainers because of the TD manager's question concerning his fear regarding the user acceptance (i.e., *"mental implementation"*) of the ICT software, which he thought might lead to resistance to change. However, if we take the contextual factors into account, we might conclude that this fear was perhaps somewhat unjustified.

During a session that was organized to discuss the change three years later (November 25, 2013) result the estimated scores on PDI and UAI were discussed briefly. The manager TD confirmed that *"the PDI is indeed low, however he was also aware of the fact that this could be experienced differently by the employees. Because I think that the power distance is low does not mean that other employees also behave like that. This is something I always keep in mind."* Furthermore, the manger TD stated that *"in general the TD culture is risk avoiding, employees do not like uncertainty and ambiguity, are a bit conservative and not really entrepreneurs. Of course they are used to work according strict laws, regulations and procedures regarding aircraft maintenance. Those clear black and white rules, there is not much grey in that, suits them well. The service engineers are of course responsible and make work related decisions, but within the boundaries of the procedures. Nevertheless, this 'culture' is also applicable on all other new things we are trying to improve here, and then this 'culture' is sometimes contra-productive.*

Figure 6.3 shows that Case 2 fits within the innovative culture of Ulijn and Weggeman (2001). Although the implementation of the MRO software can be seen (see dotted line) as a technical

innovation the change approach and cooperation with many super users representing their direct colleagues can be regarded as a social innovative (bottom up) change approach.

After the change project was finished a formal End of Project (February 2009) document was written by the project manager in which lessons learned were described. Following the three criteria as mentioned in Chapter 2 (i.e., time, budget, and performance) this End of Project document is very clear. Initially the project planned to have a lead-time of one year (365 days). The actual realization mentioned in the document was 364 days (- 0.27%). The budget for this project was estimated to be 1.932 (x € 1,000). After implementation the actual budget spent was 1,256 (x € 1.000), which implies a reduction of 35%. The estimated man-days (i.e., resources) for this project were estimated at 2385. The actual man-days spent after finishing the change project was 2495 (+ 110). Exceeding the man-days estimation had to do with the extra time needed for solving issues regarding functionalities in TRAX (i.e., vendor reports, interfacing with other systems, connection with printers) after the Go Live date of the system. This aftercare period took about three months. The extra hours made by the super users and employees of the TD to solve the minor issues was very demanding. Nevertheless, the overall change result can be regarded as successful (See also Chapter 8).

6.2 Discourse analysis of documents, interviews and meetings

As described in Chapter 4, we have adopted the same qualitative, with some quantification, research design for all three cases, and continue in a parallel fashion with the previous case using comparable methods for the data selection. This design allowed us to develop rich and deep insights that may have been difficult to acquire through the use of other, more quantitative research designs that employ survey data or the use of public documentation (Bonoma 1985; Corbin and Straus, 2008). The discourse analysis combines several methods (i.e., speech acts, negotiation strategy, communication support, conversation phases, and word count) that all provides in-depth insights into the interaction and sensemaking dynamics during the change process.

The change process of this case was intensively followed over a period of nearly one year (2008-2009) using participant observations in which the researcher worked closely with two external consultants and participated in and/or observed the change process and interaction processes between different professional groups. The change project was in a real life setting, thus requiring actual change interventions to be developed in close cooperation with the change project team and the employees.

The speech acts analysis was based on a diagnostic workshop with the management team and project managers, which was set up to chart the progress of the ICT system implementation. The goal of the diagnostic workshop, facilitated by one of the external consultants, was to discuss how responsibilities had to be shared and what kind of threats could be expected during the implementation. The desk research consisted of an analysis made of formal project documentation (i.e., project initiation document, newsletter, test script of user acceptance test, and the end of project document).

We conducted 29 semi-structured interviews with employees working in the technical department. These interviews, which were performed by the two external consultants and the researcher,

focused on generic change project related issues, the function and impact of the new MRO system and on the contextual aspects (e.g., the organizational, change and intentional context). The interviews took between 30 and 90 minutes, and since recording the interviews was not allowed due to company restrictions regarding confidentiality, only written notes could be taken. Afterwards, the interviewees approved these notes and agreed with the content as described. The interviews allowed us to collect in-depth stories of the professionals' perceptions of the change project. The combination of the interview results were discussed in a feedback meeting held with the management, project management and representatives from the employees.

During our presence we observed team sessions of the change project team as well as a four-hour diagnostic workshop of the management team (three persons) and project leaders (two persons) that was facilitated by one of the external consultants. The researcher attended and observed this diagnostic workshop and took notes. The formal diagnostic workshop was followed by a spontaneous informal discussion between two project leaders (the general and business project managers) and the consultant who, was also observed by the researcher. Notes were taken from both discussions, then coded in a separate workshop with six students, and subsequently analyzed using the discourse framework as described in Chapter 4. Appendices C and D show the utterances and coding of both the formal diagnostic workshop and the informal spontaneous conversation with the project managers.

The discourse we analyzed consists of both spoken and written language and can be divided into formal and informal texts. We divided the description of the discourse analysis into four separate parts: (1) discourse in formal written project documentation, (2) discourse in formal interviews with individual employees, (3) discourse during informal conversations between employees, and (4) discourse during and after formal team sessions.

6.2.1 Formal project documents, lexically analysed

To gain insights into the formal written language we performed a word-count analysis of five project documents. Three of the documents were written by the project management: (1) project initiation document, (2) script for the User Acceptance Test (UAT) document, and (3) the end of project document. The UAT document served as a script to test the MRO software before its acceptance by the super users. The fourth document was a newsletter written by the management team, and the fifth was a function and impact document, which was written by one of the external consultants and was based on interviews held with employees. Using these formal written project documents, we could understand the formal discourse of the organization as it relates to the change project. This might be quite different compared to the spoken formal and informal conversations. In doing this, we could gain insight into the change dynamics and the different discourse styles related to professionals who interact with one another during change.

The analysis of formal organization documents related to the change project is done in a similar way as in Case 1 (see Chapter 5). Table 6.1 provides an overview of this documentation, showing the typical words used in the documents, as well as their frequency. The indication TI and SI between brackets after the words refers to the type of innovation expressed by the word, labeled by the researcher, which is discussed further in Chapter 8.

Table 6.1 Typical words in formal written project documentation

Organization documents			
Documents	Total words in document	Typical words	Frequency[18]
Project Initiation Document	8,719	Project	222
		Board	72
		Business	44
		Technical (TI)	39
		Products	36
		Phase	35
		Plan	28
		Implementation (TI)	27
		Processes	23
		Risks (TI)	21
		Costs	19
		Team (SI)	18
Script for User Acceptance Test (UAT)	14,315	Order (e.g., a work order)	694
		Screen	309
		Result	252
		Inventory	199
		Process	147
		Authorization	107
		Colleague	107
		Manager	107
End of Project Document	4,125	Project	53
		TRAX	36
		Business	12
		End users (TI)	11
		Good (e.g., results)	9
		Costs	8
		Super users (TI)	8
		Finance	7
		User organization (TI)	5
Newsletter about the project	1,200	TRAX (e.g., new MRO systems)	24
		METALS (e.g., former MRO system)	10
		Go-Live	6
		Project	5
		Trained/training	4
		End users (TI)	3
		Engineering (TI)	2

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18 In Table 6.1 percentages are not used because the words represent a selected part of the total words.

Organization documents			
Documents	Total words in document	Typical words	Frequency
Functional impact and analysis document	3,507	TRAX Department Functionality Engineering Super users (TI) Work instructions Planning Basic training Employees (SI)	70 20 15 14 12 10 8 6 6

Table 6.1 shows the word count of the different written documents. The first Project Initiation Document (PID) is the formal project plan listing typical project management words (i.e., board, business, plan, phase, cost, and risks). This document formalizes the strict project goals, timelines, and deliverables. It is nearly a contract between the project management and the board stating the conditions and results of the project within a time frame. The end users are not mentioned in this document, which might suggest that they are not considered as being crucial during the implementation. This project initiation document focuses on the physical implementation of the MRO application, but not on the mental implementation in the minds of the end users. This seems strange because, in fact, that was one of the concerns of the TD manager to the external consultants when he stated that, *"he was not afraid about the physical implementation of the new MRO software, but concerned about the mental implementation."*

It seems that in formal written documents, a certain distance is created between the objective change reality and how employees actually see and feel the change reality. Most of the time this is not done consciously, but seems to be a pattern in today's project management when people are placing themselves outside the change reality while at the same time, they are all taking part in the change reality (Kuhlmann, 2013). Moreover, in this word-count analysis, as in our first case, we see a similar use of abstract words that are typical of formal written documents.

The second document is a test script for a user acceptance test (UAT) and therefore more work-process oriented. The word *"colleague"* is mentioned 107 times, which can be seen as strange in a formal test script. The third document is an end of project document and evaluates the whole change project after it was finished in November 2009. In this document end users and super users are mentioned explicitly to affirm the crucial role of these groups to end the project successfully (e.g., the word *"good"* is mentioned). The above-mentioned documents were all written by the change project group which obviously reflects the project managers' discourse when interacting with senior management and the project board. Formal written project documents are often used as a justification for the change project. The PID is used as a formal document to justify the change project and to show the controlled and planned change approach, which usually gives management the feeling of being in control. The project evaluation document finally describes the objective facts about the change project and states that the project was delivered within the set time and budget, but also that the implementation of TRAX needed more work before the full functionality of the

system could be used by the aircraft service engineers. These formal written documents reflect the different discourse styles of the professional groups. But, these documents do not reflect the daily interaction and the sense making dynamics between participants that caused discussions, sometimes creating problematic situations, this is clearly visible in the oral interactions, as analysed further.

The newsletter written by the management team of the TD was meant to inform the employees in the organization about developments and progress of the change project. Normally, newsletters have a much more informal character than project documents. However, the words most frequently used relate to the ICT applications followed by words about training (i.e., being trained), end users and engineering. These words indicate that the newsletter is meant to inform the end users and to highlight the project's progress. However, the newsletter does not pay attention to the difficulties in developing and testing the new system, that clearly arose during the change process. It appears that all of the formal written documents are meant to reflect that the change project is going orderly and that the MRO system will be implemented according to the plans made previously.

The final document is a functional impact and analysis document written by one of the external consultants. It provides more insight into the MRO system, the impact on work processes and the difficulty of handling the software. The document is based on 13 separate interviews held with employees concerning the expected functional impact of the MRO application on their work. Based on this document the focus was determined of the training sessions for the approximately 200 aircraft service engineers.

This document shows some abstract words, yet it pays attention to actual changes in the work of the end users (i.e., the aircraft service engineers). The combination of all 29 interviews as well as the functional impact and analysis document (based on 13 separate interviews) were input for a formal feedback meeting with the TD management, the project management and representatives from the employees on October 16th, 2008. Hence, we first investigated the change situation, and afterwards gave advice so that it could then be decided together with the members of the organization what would be the best way to continue. The researcher was a participant observer during this feedback meeting, while the two external consultants presented their plans and discussed them with the participants.

The general discourse of the written documents is formal and technical and illustrates a typical abstract discourse. Particularly, in the project initiation document, it is assumed that the ideas of management will be unquestionably adopted by the employees. None of the documents mentions possible implementation problems due to resistance to change or different discourse styles that could affect the interaction. Apparently, the assumption is that once clear project instructions have been given, the employees will automatically do what is expected of them.

6.2.2 Semi-structured interviews with employees

Social aspects involved in the change process (i.e., the interaction, the cooperation between different departments, the sensemaking dynamics, and discourse differences) cannot be investigated by only looking at formal written project documents. Therefore, we need to talk in formal and informal settings with employees, observe what is happing and to take notice of how different discourses might affect the change process.

As mentioned in Section 6.1 regarding the change context employees of Aircraft Maintenance, Engineering, and Purchasing & Logistics participated in the change process. The first semi-structured interviews were held with managers from the different departments and the general project manager. By doing this, we obtained various insights from a managerial perspective regarding the change process and we were able to inquire who else might be interviewed, and so adopting a snowball approach. This process resulted in 29 interviews. The three different departments also represent the different professional groups, although they all have quite a similar educational background related to the aerospace industry, aircraft engineering and maintenance. The interviews with the TD managers indicated their expectation of possible resistance to change from within their department. The language they used to describe this expectation can be linked to the specific professional background of each department.

The **manager TD** stated the following: *"The new system is absolutely a need to improve our service quality and increase the aircraft punctuality. At this moment we use the system as usual, but in the long term I know that the MRO system will give us much more detailed information about team performance, costs, possible savings, and so on. But I think it is better not to discuss these things at this moment."* This implies a certain dichotomy in his thinking between a short and long term perspective on the change project. For now, it is important that the MRO system be implemented, but over the long-term he foresees opportunities to manage the TD in a more efficient and effective manner. This focus on efficiency and effectiveness fits within the professional discourse of the manager in general.

The **general project manager** who is an aircraft maintenance engineer himself stated: *"TRAX is important for the technical department. However, the manager of aircraft maintenance hangs on to the 'good old things', trying to do business as usual"*. […] *"With the implementation of TRAX we redesign work processes, meaning that aircraft maintenance should be in the lead regarding the paper work. This is a common way of working within airline companies that use TRAX, so it must be possible here, too"*. […] *"I want more awareness and acceptation for TRAX within the management team of the technical department and the end users."* This statement represents the technological perspective of a project manager who is responsible for the change project and who knows the work of the aircraft maintenance engineers from the inside out because of his own experience in the field. It is also obvious that he has been working in the TD for quite some time, and that he knows the unspoken opinions of the manager of aircraft maintenance.

The **manager of Aircraft Maintenance** stated: *"…the work of the aircraft maintenance engineers should not become more difficult. They have to do maintenance and not all kind of paper work. That will take too much time!"* The manager has worked for a long time in the TD, knows his employees, and has a strong opinion about the administrative workload that comes with the MRO system for his department. He foresees a change in the work processes that could lead to other tasks and a different role for the aircraft maintenance engineers, hence representing more social aspects because they will have to communicate with employees who work at other departments. The MRO system demands that they are in the lead when aircraft maintenance must be done.

The **manager of Engineering** states: *"We excel in solving acute problems. When problems require creative solutions our employees are always motivated. However, we are not very structured in translating these solutions into concrete work instructions"*. […]*"my employees are not used to*

strict planning schedules; they need flexibility." The manager of engineering is responsible for the engineers within the TD who all have their Bachelor's degree in engineering and who define the work breakdown structure of all aircrafts. This is an office job for highly educated employees who do not need daily managerial attention and who take pride in their flexibility and freedom, which allows them to fill a special role in the TD organization.

The **manager of Purchasing & Logistics** stated: *"We have to cope increasingly with legislation issues and international aviation laws, leading to more formalities and documentation."* This fits with the more administrative-minded role of those who work in purchasing and logistics, and who are responsible for spare parts and materials, but also for delivering the correct paper work required in the aerospace industry.

Finally, the business project manager stated: *"I think TRAX is a good system that has a lot to offer and can really improve our way of working in the long term. But I do not hear our management about this long-term perspective. It would be good if they voiced their ambitions on this!"* This quote from a younger aircraft maintenance engineer, who has the role of business project manager, demonstrates that he is aware of the long-term benefits of the MRO system. Something the TD manager also recognizes this long term perspective as stated above, but hardly wishes to voice, due to the fear that he would be fuelling the resistance to change. In fact, by not speaking out these long-term benefits, this business project manager has become dissatisfied. The business project manager sees the long term benefits of the MRO system and finds those arguments to be more appealing to the end users giving them a purpose and drive to improve the customer service and punctuality. Unfortunately the TD manager seems to be afraid of resistance among the employees and chooses first to realize the implementation of the system.

The quotes from the managers all show that each manager is looking at the change project from his own perspective. They seem to agree that things need to change, but they all think the change effort and impact for their department should be minimized. The TD manager knows the long-term possibilities of the MRO system, but he does not want to talk about it openly out of fear of fuelling resistance to change. Both the general and the business project managers state that their project deserves more attention and awareness of the long term possibilities of TRAX, also knowing that in the long term the system can be helpful to increase effectiveness and efficiency within the TD. The manager of Aircraft Maintenance warns about more paper work for his aircraft service engineers, while the manager of Purchasing & Logistics points out that legislation will lead to more paper work.

Nevertheless, the system will demand a clear process flow and it will require a way of working in which everyone will soon learn that the old way of working is not possible anymore. The manager of Engineering points out that his employees need flexibility to produce good work packages for aircraft maintenance. These quotes alone imply that at the management level of the TD there is no consensus regarding which direction the change process should take, except for the fact that TRAX must be up and working before the deadline that was agreed upon February 1st, 2009.. The long-term vision is obvious to the TD manager and the project managers, but they do not explicitly mention them. The others seem to focus on the short term, keeping what they have and shifting the workload to others.

In addition to the interviews with the managers, we also held semi-structured interviews with super users and some of the end users. The group of super users have the substantive knowledge about the MRO system because they worked in the change project team and they are the experienced employees responsible for implementing the system in their own departments. The end users working in the hangar only heard from the super users what was going on in the change project, when they had actually communicated about the change process in their teams. Some of the super users working in the aircraft maintenance teams, who work in shifts, were not able to inform all of the colleagues in the hangar. We recognized that the aircraft maintenance engineers in particular, as they represent the largest group in absolute numbers, had hardly been informed about the new MRO system.

Interviews were conducted with individual employees in both the super group representing the three departments and with end users in the hangar. These interviews confirmed the differences in the sense-makings across the groups with different professional backgrounds. We give several examples of statements that we collected in the different groups, representing the three departments.

The super users represent their colleagues. They have been involved in the project from the very beginning. There are differences in perceptions that can be found between the three departments. A user working in Aircraft Maintenance department stated: *"We are enthusiastic about the new system and we feel very involved, but it lacks long-term vision. The possibilities of TRAX are not being fully exploited. We do not know whether this will change in the near future."* This statement is also mentioned by the Project Manager Business. Users working in the Engineering department stated: *"The direction is clear; we need a new ICT system! The former system is outdated, but the impact of this change on our work process is not clear to everyone."* Furthermore, users working at the Purchasing & Logistics department are clear when they state: *"We find it difficult to train direct colleagues, we are not really trainers"* […]. *"We used to have an open and informal way of working, but since the aviation law in 1994 we have had to follow strict procedures and rules. The 'old days' of just doing what seemed right are over."*

The Aircraft Maintenance engineer and his colleague at the engineering department both see the benefits of the new ICT system. The Engineering employee is more cautious stating that he cannot oversee all the consequences for his work processes. The Purchasing & Logistics employee focuses on the procedures and rules, which often implies more paperwork, but in general we see that the super users are rather positive about the new ICT system. This seems to be logical because they have been involved from the very beginning and they have had time to become acquainted with the system and to oversee the consequences of the implementation. The Aircraft Maintenance engineer even sees more possibilities that the system has to offer, and this seems to be a general point that the super users are more positive about the system than some of the managers. We believe this had to do with the knowledge the super users acquired during their intensive work on developing and testing the system. This gave them a chance to experience the possibilities of TRAX firsthand, which is not something the management experienced. The super users actually changed their behavior during the change process, and the management observed how some of the super users changed in their role, taking a lead and how they became proponents for the change project. The end users were ad-hoc informed about new developments by the super users, but they were at a distance

from the change project. The quotes below show their perception in relationship to the change project.

The end users working at the Aircraft Maintenance department stated: *"We find it especially difficult to work with the new system because it has a completely new look and feel"*. *"…I think using TRAX is a bad idea, we still have the old system which is doing fine. Why spend all this money and effort?"* This is a general reaction from the older aircraft maintenance engineers, whereas the younger ones did not display these negative reactions towards the new system. The employees working at the Engineering department are younger and more educated than the aircraft maintenance engineers. This is reflected in their statements: *"…TRAX is just working as Windows and I'm familiar with that, so I think it will be easy."* Finally, employees of the Purchasing & Logistics department appear to be less well-informed about the new system: *"We do not know everything yet, of course our key user informs us about developments but we have to work with TRAX after only a short, one-day training."*

The quotes show the variety in perceptions about the change project across the different groups (project managers, super users and end users) and across employees with different professional backgrounds (Aircraft Maintenance, Engineering and Purchasing & Logistics). We see that the nearness or connectedness with the change project is important to understand the possibilities of the new system. Project management and super users are all involved in the change project and can gradually learn to work with the system and the developed processes. The end users are less involved, for they have only heard about it from the super users (if they communicate) or perhaps they have seen a newsletter about the project, but they are not in a position to intervene.

The differences among professional backgrounds are prominent. We found that Aircraft Maintenance engineers are very precise and often find that there is only one optimal solution to a problem. They are critical and analytic, they want to know the details, and they have an dichotomous thinking preference. The Engineering employees prefer to see the 'big picture' because in their work they have to oversee the breakdown structure of the entire plane and design maintenance tasks for Aircraft Maintenance employees and to keep track of the spare parts that are registered as on or off equipment (i.e., parts that are on the aircraft or not). The Purchasing & Logistics employees have an eye for administrative tasks and they would like to collect data on as many indicators as possible. With regard to the professional groups, managers mainly look for the 'big picture' of the Technical Department and adopt more abstract reasoning.

The super users in the change project team can be compared with change project managers because they also look for the general direction of the change project and how that fits within the company's direction. However, they are still critical and sometimes are afraid for the unknown (e.g., giving training to their colleagues or not knowing what the work process will look like). The super users are also somewhere in between the TD management and the end users because they still have the critical perspective of end users who will have to work with the system in the end. The TD management might view this critical perspective as displaying a resistance to change, but in fact this might be a normal reaction, which results from their analytical and detailed way of thinking.

With this critical perspective the super user group could also be very beneficial to the change process once they start seeing the possibilities of the new ICT system and become true ambassadors for the change program. During the change project this ambassadorship worked very well for the

change process because the super users knew all the detailed questions their colleagues might ask because it is their work. Another important aspect in this respect is the same language usage of the end users and super users.

6.2.3 Informal interactions and participant observations

In addition to the formal interviews, informal conversations were observed between the employees of the different departments during lunch or coffee breaks. A super user from Aircraft Maintenance stated: *"…the paper work for ordering parts is much work and it is difficult. We have to train many people within our department which will be hard."* An employee from Logistics responded: *"…I know, but that is just one of the changes and we knew this from the start! Perhaps we can arrange a work-around […] Give us a call, we do the administration and then we stick to the current procedure. However, we have to agree on a date when we really start working according to the new responsibilities."* An employee from Engineering suggests: *"…perhaps this is not right. When TRAX is up and running, employees need to work according to the new process flows. Maybe we can use this work-around only during 'out-of-office' times."* The Logistics employee responded: *"…I will make a detailed work instruction which will be the way of working during 'out-of-office' times. During daytime we can update the administration with the overnight data."* This informal conversation shows the quick problem solving character of the employees when discussing work-related problems during lunch.

In the subgroups, we observed more informal conversations, which reflected the problem-solving attitude that seems to be characteristic of the service engineers in general. The quotes above reflect the different professional discourses in which the aircraft maintenance employee would like to minimize administrative tasks; the engineer is practical and suggests using the work-around during out-of-office hours whereas the Purchasing & Logistics employee wants to come up with detailed work instructions (e.g., make a formal procedure for this temporary solution).

The formal semi-structured interviews and informal conversations differed in tone. The formal communication of management was based on increasing service quality and punctuality (long-term goals), whereas the informal communication focused on implementing the ICT system within the time and budget constraints (short-term focus). Table 6.2 shows illustrative utterances for each professional group. Note that all of the groups share an engineering background, but have different formal roles in the organization and change project which also influences their language use and behavior. These different functional roles can be related to their specific department and might indicate that they also have different perspectives towards the change process and future developments of the ICT system.

Table 6.2 illustrates that formal discourse (e.g., overt utterances) reflects the tone used in the formal written project documents. In formal discourse, the super users are involved and enthusiastic, but informally they state their doubts about the long-term benefits of the system. The TD management seems to speak with a double tongue. In the written project documents the management confirms their ambitions and fully agrees on the system implementation. However, the interviews reveal that the same managers question the long-term benefits of the new system. These different messages and doubts are not openly stated by the managers because they are afraid to induce resistance to change among the employees. Management seems to believe that employees accept the formal message, but in fact most employees are skeptical because they sense the inconsistency in the messages they receive.

Table 6.2 Formal and informal reactions of different professional groups

Professional group Reactions	End Users Of three departments	Super users Of three departments	Management Of three departments
Formal discourse	"We do not know enough about the new system."	"We are involved and enthusiastic about the possibilities of this new system."	"We fully agree with the implementation of this new ICT system."
Informal discourse	"We find it difficult to start with the training sessions and learn how the new ICT system works." "We first have to see it first, before believing in its merits."	"There is no long-term vision, and we will not benefit enough from the system this way." "We are afraid of providing training ourselves."	"Do not discuss the long-term perspective, since that will give resistance." "We want this new system as long as it does not lead to more administration for our engineers."

We can conclude that generally speaking, the management would like to avoid risks during the change process and their main concern is to implement the new system within the time and budget constraints. What will happen afterwards is not important in the short term, and it is seen an issue that will have to be solved later. For the short term, it is important to stick to security rules for aircraft maintenance, avoid difficulties in the cooperation, and reduce the hassle during the change process.

6.2.4 Discourse analysis of the formal diagnostic workshop

The discourse framework as described in Chapter 3 is used to analyze 1) the formal diagnostics workshop with the managers and 2) a short informal conversation afterwards with the two project managers. The participants of the formal diagnostic workshop were three departmental managers (manager of Aircraft Maintenance, manager of Engineering, manager of Purchasing & Logistics), two project managers (general project manager and the project manager business), and one external consultant. The researcher acted as an observer who did not take part in the discussion, but who took notes. Appendices C and D report the detailed results from our observations based on 36 utterances. The speech acts, negotiation strategy, communicative support and conversation phase per role are shown in Tables 6.3, 6.4, and 6.5. Notice that the different participants all have a technical (e.g., aircraft engineering background) which may imply that they used a common technical language during this diagnostic workshop. However, in their formal roles they also take other issues into account. First, the results of the formal diagnostic workshop are given, and then the results of the informal conversation.

Table 6.3 Classifying speech acts counted per professional role in a formal setting

Speech Act	Manager (n=3)	Project manager (n=2)	Consultant (n=1)	Total
Assertives	14	9	1	24
Directives	2	1	5	8
Commissives	-	1	1	2
Expressives	6	1	-	7
Declarations	-	-	2	2
Total =>> minus 7 double counted				43[19]

Table 6.3 indicates that the assertive (claims) speech acts of managers (14 items) and project managers (9 items) frequently reflect their technical background, i.e., preferring hard evidence and clear answers on detailed questions. These results confirm the previous findings in Chapter 5. The managers also used expressives (concerns and feelings) (6 items), which is not common for typically introvert technicians. In this case the managers knew each other very well and they felt psychological safe in which they could express their feelings about the change project.

Table 6.4 Negotiation strategy and communicative support counted per professional role in a formal setting

Negotiation strategy and communicative support	Manager (n=3)	Project Manager (n=2)	Consultant (n=1)	Total
Non-cooperative	3	2	1	6
Cooperative	8	4	1	13
General	9	4	3	16
Meta-communication	6	4	4	14
Total =>> minus 13 double counted				49[20]

Table 6.4 indicates that (general) managers differ from project managers in their negotiation style. The managers use a cooperative style (8 items), which fits with their role in the organization. The managers predominantly use general (9 items) and meta-communication (6 items). This is less prominent in the utterances of project managers. This type of communication might stem from the fact that the general managers envision their role as communication facilitators in the organization. They do not focus on the details of work processes of the employees. During the diagnostic workshop, managers (8 items) and project managers (4 items) showed a cooperative negotiation

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19 The total number of codes (43) is higher than the number of actual utterances (36). Some utterances were coded with more than one speech act. This explains why the total amount counted is higher than the 36 speech acts. See Appendices C, D and G for details.

20 The total number of codes (49) is higher than the number of actual utterances (36). Some utterances were coded with more than one negotiation strategy and/or communicative support. This explains why the total amount counted is higher than the 36 utterances. See Appendices C, D and G for details.

style. These findings confirm the results found in the previous case and might be indicative of the professional discourse of service engineers in general. Finally Table 6.5 reports the number of utterances and the particular conversation phases of the formal diagnostic workshop.

Table 6.5 Conversation phase counted per professional role in a formal setting

Conversation phase	Manager (n=3)	Project Manager (n=2)	Consultant (n=1)	Total
Initiative	5	3	3	11
Understanding	9	9	1	19
Performance	3	1	2	6
Closure	-	1	3	4
Total =>> minus 4 double counted				40[21]

Table 6.5 evidences that in the diagnostic workshop the dominant conversation phase tended to be the understanding phase. Both managers (9 items) and project managers (9 items) use utterances that imply that the conversation is about mutual understanding and explaining the different perceptions. This phase can be seen as an important step in the sensemaking process. During the diagnostic workshop, it was important to investigate how much influence the employees had who would not cooperate in the change process. Furthermore, employees' own attitude towards the change process was discussed. Yet, the group barely reached the performance and closure phases in their discussion, indicating that the cooperative negotiation style was rather superficial. This superficiality also surfaced in the informal conversation afterwards in which two project managers were gossiping about a general manager. All in all, many non-cooperative strategies were used regarding other professional groups and the change process in general, which led to difficulties in sharing one mental model. This lack of cooperation might have been the cause of the resistance towards cooperation that was needed for implementing the ICT system.

6.2.5 Discourse analysis of the informal discourse

After the formal diagnostics workshop had finished, both the project managers and the external consultant remained behind in the room. The general project manager wanted to share some information about the past that had influenced the change project at this time. An informal conversation followed for approximately one hour and the researcher attended taking notes. Table 6.6 shows the speech acts counted in the informal conversation setting based on 12 utterances that represent the overall gist of the conversation (See Appendices C and D).

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21 The total number of codes (40) is higher than the number of actual utterances (36). Some utterances were coded with more than one conversation. This explains why the total amount counted is higher than the 36 utterances. See Appendices C, D and G for details.

Table 6.6 Classifying speech acts counted per professional role in an informal setting

Speech Act	General Project Manager (n=1)	Business Project Manager (n=1)	Consultant (n=1)	Total
Assertives	6	3	1	10
Directives	-	-	1	1
Commissives	-	-	-	-
Expressives	1	-	1	2
Declarations	1	1	1	3
			Total =>> minus 4 double counted	16[22]

Table 6.6 indicates that both the general project managers (6 items) and the business project manager (3 items) use assertives because they want to convince the consultant about their perception of the reorganization two years ago within Aircraft Maintenance (AM). This reorganization process was not acceptable for the manager AM, but he was forced by the manager TD to go along. According to the project managers this experience with the manager TD still continues to influences the AM manager's behavior and his perception regarding the current change project. This past experience of the AM manager was noticed in the actions and utterances by the general project manager's at this moment. The results also show that no commissives are used which might imply that talking about past events does not require commitment anymore because commitment is mainly related to future actions.

Table 6.7 presents the negotiation strategy and communicative support of the project managers during this informal conversation. The figures suggest that the general project manager (6 items) and the business project manager (3 items) use more meta-communication in the informal conversation compared with the formal diagnostic workshop, which might indicate that there is less reason to convince others and to speak in a more reflective way about the situation.

Table 6.7 Negotiation strategy and communicative support counted per professional role in an informal setting

Negotiation strategy and Communicative support	General Project Manager (n=1)	Business Project Manager (n=1)	Consultant (n=1)	Total
Non-cooperative	-	3	-	3
Cooperative	1	-	1	2
General	1	1	1	3
Meta-communication	6	3	-	9
			Total =>> minus 5 double counted	17[23]

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22 The total number of codes (16) is higher than the number of actual utterances (12). Some utterances were coded with more than one speech act. This explains why the total amount counted is higher than the 12 utterances. See Appendices C, D and G for details.
23 The total number of codes (17) is higher than the number of actual utterances (12). Some utterances were coded with more than one negotiation strategy and/or communicative support. This explains why the total amount counted is higher than the 12 utterances. See Appendices C, D and G for details.

Finally, Table 6.8 traces the conversation phases in this one-hour informal conversation. The general project manager took the initiative (2 items) to start this informal conversation followed by utterances of the general project manager (4 items) and the business project manager (3 items), explaining their perception of the situation. This conversation therefore mainly remained in the understanding phase, and because there was no need to reach an agreement; the performance phase shows no counted utterances. Because the general project manager took the initiative to start this informal conversation, he also closed the session.

Table 6.8 Conversation phase counted per professional role in an informal setting

Conversation phase	General Project Manager (n=1)	Business Project Manager (n=1)	Consultant (n=1)	Total
Initiative	2	-	1	3
Understanding	4	3	1	8
Performance	-	-	-	-
Closure	1	-	-	1
			Total =>> minus 0 double counted	12[24]

The results of this informal conversation (see Tables 6.6, 6.7 and 6.8) indicates quite a similar pattern compared to the formal diagnostic workshop. In both sessions the use of assertives by the managers and project managers, who all had an education in aircraft engineering, appears to be obvious. In the previous case, the use of assertives was also noticed, which seems to be typical for the professional discourse of service engineers. During interaction, these different implicit discourse styles might cause delays and difficulties in the sensemaking process of participants when they are not made explicit in the formal and informal conversations.

6.3 Interaction amongst different professional groups

The overall observations are based on the semi-structured interviews, the formal diagnostics workshop, and an informal conversation, which represent that the development in the interaction between employees from different professional groups was rather ad-hoc. Discussions often had no clear structure and each time, new issues were brought on the table. It seemed that during the meetings the communication patterns were chaotic and in a meeting with the super users many detailed questions were addressed, but none of them were really answered. Each question led to new questions, which often created a conflict situation. Sometimes it was necessary for the TD manager to attend the meeting and make a final decision. The super users (i.e., the aircraft maintenance engineers, engineers and employees from the P&L department) were not able to discuss in a structured manner and needed more guidance or conversation rules to make progress during the meetings.

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24 The total number of codes (12) equals the number of actual utterances (12). In this situation every single utterance was just coded once with a specific conversation phase. See Appendices C, D and G for details.

During the change process the external consultant increased the awareness about differences in discourse related to professional groups during the meetings, thus resulting in several rules of conversation. The rules were written down together, received a prominent place in the project room and helped the professionals to be aware of their different discourses and to steer their conversations towards a performance and closure phase. The observations show that over time the discussions became more constructive and that the awareness of different professional discourses made cooperation among employees more successful, as employees gradually learned to accept and deal with their differences in language usage. They respected each other's discourse, taking time to try to understand what others were saying, which might suggest that the misaligned professional discourses were indeed an important reason for the resistance to cooperate. These findings provide additional, albeit circumstantial, evidence for our argument that the differences in discourse of professional groups interacting could partly account for resistance to change.

Currently, more than three years have passed, and the employees are using the new system, which seems to have been broadly accepted, although there are still a few individuals who are resistant. We think this has to do with their negative experiences with the reorganization within the TD two years ago, which resulted in a demotion for some of the team managers within Aircraft Maintenance.

6.4 Summary and conclusions

This case focused on the interaction and sensemaking processes between (aircraft) service engineers trying to understand the professional culture and discourse of the interacting professionals. Next, we discuss the six subquestions of this study in relation to this case.

The first subquestion focused on *the organizational and change context of this case*. This organization can be seen as egalitarian within a hierarchical organization structure. During the semi structured interviews employees mentioned the *"we-feeling"* and their *"green hart"* for their company (see Section 6.1). The TD is centralized at Schiphol East with all three departments and staff facilities in one building which made communication lines short and direct. Nevertheless, the case still represents a functional organization structure with hierarchical levels.

In the second subquestion the *Professional Culture and Professional Discourse of the interacting participants* was key to find out. The discourse analysis of both the formal and informal meeting show that utterances of managers and project managers often are coded as assertives (see Tables 6.3 and 6.6). This fits with the idea as found in Case 1 that assertives might be typical for the engineering culture. The professional background of all the actors in this change process can be viewed as aircraft technology, which is quite homogenous in this case. Thus it seems to be logical that the difference in their professional discourse is minimal and will not affect the change process negatively. Nonetheless, this does not seem to be a good assumption, because the professional group (i.e., the departmental divide) one belongs to also infleunces the language use. This is clearly illustrated by the quotes taken from the semi-structured interviews in Section 6.2.2 which shows the typical departmental perspective.

This particular case shows that, although there is a shared professional discourse, the differences between the departments also influence cooperation and might strengthen resistance to change and affect the overall change result. The literature described in Chapter 3 (see Table 3.1 for definitions) relates Professional Discourse in particular with professional education and background (e.g., the accounting discourse mentioned by Philips, Lawrence and Hardy, 2004) or belonging to a professional community (Pogner, 2005). This case suggest there is an additional sub-professional culture which relates to the department one belongs to leading to an extra dimension within professional culture.

The third subquestion is about *the difference between PC and PD as a possible cause of resistance to change.* In this case the manager TD invited an external consultancy firm with the question *"I think the physical implementation of the system will not cause trouble, but I am not sure about the mental implementation."* During participant observations in meetings we found that the messages from the general management were different in a formal setting compared to an informal setting (see Table 6.2). First, the TD manager formally announced that the short-term implementation of TRAX had the highest priority and the deadline for the go-live date should be achieved. This was stated by the management in formal situations as *"we fully agree with the implementation of this new ICT system."* However, at the same time the manager TD had a long-term goal, which concerned the efficiency, service quality and punctuality of the aircraft maintenance department, and which he discussed informally with the consultants. The Manager TD sometimes stated that he *"did not discussed the long-term perspective, since that will give resistance."*
By doing this the manager might have induced resistance to change while at the same time he would avoid that. The project managers and the group of super users noticed these unarticulated messages of the manager during informal gatherings. They wanted a thorough development of the ICT system (e.g., *"we are involved and enthusiastic about the possibilities of the new system"*) leading to these long-term goals (see Table 6.2 for quotes). Realizing only the short-term (e.g., the implementation deadline) goal would lead to the sub-optimization of TRAX and thus no real improvements. Thus, in fact, both the manager TD and the project manager had the same goal, but the manager TD did not want to state this formally because he was afraid that would jeopardize the deadline for implementing the MRO system. This dual message never came explicitly to the surface, but everyone noticed that the manager spoke with a forked tongue (i.e., a hidden or ulterior motive).

The fourth subquestion dealt with the *cultural factors, such as the interaction between OC and PC affect organization change.* For answering this question we draw on Figure 5.2 for the organization culture which seems ideal for realizing the change project. The PC in this case can be characterized as a typical engineering culture which fits well with the change approach for the implementation of the ICT system. Most IT and software related change projects follow a similar phased implementation process (i.e., functional requirements, software selection, software settings, testing, user acceptance test, production) according a planned change approach.

For the fifth subquestion we asked if *DA can be useful to understand the organization change result?* This case indicates that interactions between employees working in different departments (e.g., Aircraft Maintenance, Engineering, and Purchasing & Logistics) with a similar professional culture can lead to differences in discourse (see subquestion two before), which can be revealed by using a discourse analysis approach including interviews, document analysis, and the performed

speech act analysis. The findings in Tables 6.3, 6.4 and 6.5 regarding the formal diagnostic workshop indicate that participants hardly reach the performance and closure phases of the conversation suggesting that there is now interplay of directives as depicted in Table 6.3, and closing the interaction in order to proceed in the change process together. Using these detailed discourse analysis on the micro level can help to understand communication in the workplace much better and find out what the direction of the change process will be.

As described in Chapter 3 discourse analysis of organization change has been examined from a 'vertical', hierarchical perspective (Dunford and Jones, 2000; Knights and Willmott, 1992). The discourse analysis in this study found that, despite that employees share the same professional educational background and culture, the different perspectives and language use of the inter-professional groups can hamper the change process. This horizontal dimension of interaction, involving inter-group relations (i.e., super users and end users of different departments) is important, but it often is not taken into consideration in change processes. Moreover, this can be seen as an contribution to the existing change management literature as used in this study. It might be good to think about change management from a marketing perspective, which often create advertisements specifically tailored to the target-groups defined. This might imply that change approaches can be successful if interventions are tailored for the specific groups, and take interaction and sensemaking processes into account.

To conclude the typical language use of different inter-professional groups (i.e., the horizontal dimension) leads to difficult conversations that might cause conflict and is mostly labeled by management as resistance to change. Furthermore, the differences between the management and the shop floor employees (the vertical dimension) will also affect cooperation and lead to difficult conversations as seen in the differences between the informal and formal utterances of the three different groups in Table 6.2. A lack of reflection upon these differences probably caused the relationships among the inter-professional groups to deteriorate, which is in line with the findings of Hardy et al., (2005). Professional groups scorned each other in both formal and informal conversations, leading to difficulties in reaching a smooth change process.

As an addition to the contemporary literature on resistance to change, the case study illustrates that resistance to change and difficulties in cooperating within a specific change project can be related to non-alignments of different discourses when professional groups interact. Some quotes illustrating these differences are; *"I think using TRAX is a bad idea, we still have the old system which is doing fine"* expressed by an older service engineer. Also the fear among some end users stating; *"we find it difficult to train direct colleagues, we are not really trainers…"* show that employees are often not resistant, but want to express their fear. However, when looking to the speech act analysis these expressives are not uttered quite often by the project managers and just a little bit by the managers (See Table 6.3).

Finally, the sixth subquestion about the use of *DA leading to additional insights concerning the interaction between OC and PC as to benefit TI and/or SI* is, as in Chapter 5 difficult to answer. Subquestion four mentioned that the cultural context factors in this case fit with the organization change project. In the word-count of documents (See Table 6.1) and the coding of the utterances (See Appendix G) most of the words relate to TI, which can be expected in this technical organization context while implementing a new MRO system. It can be concluded that

the interaction of OC and PC in this case primarily focuses on technical innovation instead of social innovation.

Measurement of the change result

We come back now to the fifth sub question by verifying the change result three years later. During a session with the manager TD (November 25, 2013) nearly three years later the initial change result based on time, budget and resources could be placed in a broader organizational context. First, the manager TD confirmed the estimated measurement as described above. Second, and more important he mentioned that in general the maintenance productivity had increased approximately 20% compared with the period before the implementation of TRAX. It must be noticed that this is not only because of the system implementation. Other improvements, such as a new schedule for the employees and stretching the maintenance interval are also included in these savings. The manager TD stated that *"TRAX enabled us to work in a more rigorous way. The engineering process was improved and modifications on our lease-in and lease-out aircraft is less error-prone. Furthermore, we have lower cost in case of failures because our maintenance administration is up-to-date."* The extra paperwork, mentioned during the change process by the manager AM and some of the service engineers has now become an advantage. The manager TD states that *"TRAX requires a strict process flow and it is not possible to do maintenance and release the aircraft without the necessary administration."* Nowadays everyone is used to work with TRAX and the system is generally accepted.

Of course a self-serving bias of the Manager TD can be expected. During the implementation of TRAX he was responsible and a member of the steering group. However, during the one and a half hour conversation a well-balanced story was told which seemed trustworthy and did not gave the impression that the change result was less successful. Of course it can be questioned what the added value is of evaluating the change result after three years in which also many other changes have been executed. Nevertheless, after this period the real organizational change outcomes are most manifest.

Chapter 7
The implementation of a customer service vision in a Housing Association

This chapter[25] describes the third case study about a change process in a Dutch social housing association. This case builds on the previous two cases in a cumulative way because of the differences between the organizational and change contexts. This case investigates how a new strategic vision is communicated by managers and how this affects the change process and discourse behavior of service engineers.

Section 7.1 reports the case context and focuses on the organizational and change context because it is in particularly the change approach that differs from the two previous cases. First, this case can be seen as a professional bureaucracy, having autonomous districts with clear responsibilities. Second, the change context can be characterized as as an interactional learning and emergent change process change process without explicit project plans, timelines and top down planned interventions. Section 7.2 mentions the data collection process of the formal organization documents using the word count method and the semi-structured interviews with employees. Section 7.3 further explains the conversation sessions that were developed as an intervention to enhance dialogues between the management and service engineers to help improve the vertical communication between the different professional groups, but this was done to improve the horizontal communication between the service engineers who work in different districts as well.

During the formal and informal conversations, discourse analysis was performed on the oral discourse. Section 7.4 focuses on the informal meetings with two service engineers and one district coordinator and Section 7.5 briefly reveals of a feedback meeting with all the managers and the conclusions they drew at that particular moment. These sections are written in a chronological way following the change process and give insights into the different discourses and how that can affect the interaction between the participants involved in a change process. Finally, Section 7.6 answers the subquestions, and summarizes this chapter.

7.1 The implementation of a required shift in behavior for service engineers

This case, which was studied from October 2008 until June 2010, involves a change in behavior and work attitude of two key function groups within a Dutch social housing association. Due to a new strategy, a group of 32 service engineers and 9 district coordinators had to change from a technical operational orientation to a customer-driven tactical orientation. The strategic vision was formulated as follows: *"We are a company that delivers rental homes, but we do that for our customers and we meet with our customers in their neighborhood."*

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25 Parts of this chapter have been based on Pieterse, Ulijn and van Wagenberg (2012). Organizational change in a public housing foundation: the crucial importance of discourse analysis. Presented at the IEEE - IPCC 2012 conference in Florida, USA on 10 October 2012.

The new strategy had implications for all the employees of the social housing association. This change process can be characterized as a social innovation, because the goal of the strategic vision was to improve the service engineers' customer orientation and paying less attention towards technical aspects of the rental homes, which was mostly their primary focus. Overall the approach of this change was rather non-linear instead of linear (see Burgelman, 1983) which discloses an organic and emergent change process in which interventions and steps to be taken were not top down planned upfront. The next section briefly describes the organizationa,l change and intentional context of this case.

The organizational context
The organizational context refers to characteristics, both tangible and intangible, of an organization as described in Chapter 4 and are partly based on the results from the semi-structured interviews with employees. The social housing association operates in the southern part of The Netherlands and is since 2005 the result of a merger between two former rental housing organizations. The association employs approximately 400 employees who work in different roles (i.e., finance and controlling, human resources, customer care, technical support and the nine districts). Together they are responsible for about 31,000 rental homes, and their neighborhood development, representing more than 70,000 customers in the city area. The company spends 98.1 million euros on maintenance and revitalizing their assets. Another 52 million euros is spent on different projects to vitalize the neighborhoods and to make it a better place to live. With 421 million euros as its own capital, the company is able to finance 41% of these assets. After the merger in 2005, the following years were spent by focusing on finding the right strategic course to take and to develop an integral vision for the nine different districts and neighborhoods throughout the city. In 2007, the goal *"Customers Choose"* was a main focal point of the company's policy and at that point in time it was rather unique to find this in the housing sector.

The organizational structure of the company, as depicted in Figure 7.1, can be characterized as an internal network of districts (1-9) with a maximum of two management layers. The nine districts represent the core operational level supported by the staff departments. Each district covers a section of the city and some of the surrounding villages. Employees are responsible for finding the right way to perform their jobs and the management only defines strategic policies. This results in a flexible organization in which customer focus is central without forgetting the company's objective to maintain a healthy financial situation. This can be characterized as an connected (island) culture (Ulijn and Weggeman, 2001) in which employees are highly responsible and self-organizing. The management team relies on the expertise of their specialized professionals who, in turn, want to have control over their own work. As a consequence decision making has been decentralized in each district which is in turn reflected in the way the strategic vision has been developed; centralized on a management level, but implemented on a decentralized district level.

The districts have two main internal suppliers. First, Housing and Building Services, which is actually responsible for doing repair and maintenance work when the district makes requests. The Housing and Building Services also operates as an internal contractor for long-term building plans (i.e., new housing and renovation). Second, the Financial Management and Services support the district with relevant long-term financial plans and budgeting. An general support staff is responsible for Communications, Human Resource Management, and Controlling. The organization chart depicted in Figure 7.1 is not a traditional hierarchical structure, but instead reflects that the core business of the social housing association is set up within the nine districts, and how all the other departments

support it. In this way the company shows its strategic vision on customer orientation. The lines in the organization chart show the relations between the different departments (i.e., the Districts, Housing, Assets and the Board). The other departments are supporting staff for the core business in the different Districts.
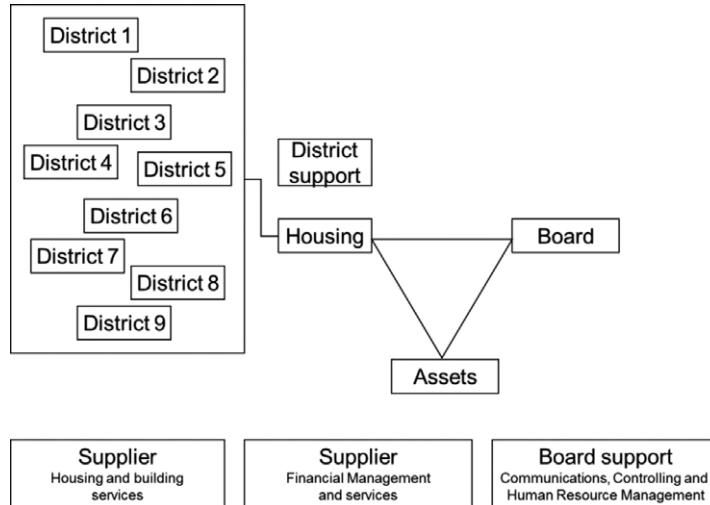
Figure 7.1. Organizational chart of the housing association

Approximately 25 employees work in different roles within each district, and each district can be seen as an 'island' which is integrally responsible for the rented housing covering several neighborhoods within a district of the city. The positions/roles relevant to this case study are (1) the District Coordinator (CO), (2) the (senior) Customer Manager (CM) and (3) the Service Engineer (SE). In most districts there is one coordinator, two customer managers and two to three service engineers. The district coordinator functions directly under the District Manager (DM). These employees together are responsible for the tenants and they are supported by the administration staff that works within one district.

The change context
The change context refers to the characteristics of the change approach and the degree to which the organization changes to meet the internal and/or external demands. The change process for the housing association started in the beginning of 2008 with a new strategic plan. The management team (MT) and district managers (DM) developed this plan and its focus on the customer. As a consequence, the service engineers had to become more customer-oriented thus they had to leave their dominant technical orientation behind. Therefore, undergoing a change in attitude and a behavioral shift was the main goal during this change process for the service engineers. The district management and district coordinators had to explain and propagate the strategic plan to their employees within each district without a specific change program nor using formal project documents. In the first half of 2008 the new strategy was implemented in an incremental way by means of holding conversations between the members of the management team, district managers, and coordinators. The idea was that within each district the district manager and coordinator would

'translate' the strategic vision into a local way of working. Thus, district managers and coordinators were to arrange conversations with the various service engineers within their district.

The overall change process was not facilitated by any project team, nor was there a specified change program. During several of these conversations within the districts, it appeared that the service engineers had apparently misunderstood the message. Discussions and rumors started to go around in the organization and the manager of Housing, who led the 9 districts, also heard diverse reactions within the districts concerning the translation of the strategic vision towards the service engineers. One of the rumors most frequently heard was that the service engineers did not need their technical skills any longer because of the new defined roles that had been created on a more tactical level, including the customer orientation aspect. In addition, many other rumors started and during that period resistance occurred, which led to heated discussions among the service engineers and the district coordinators. The manager of Housing wanted to investigate this situation and at the same time he also wanted a 'platform' to be established for the organizational conversations. His thought was also that this might be a good way forward to increase the interaction process between the employees of the different districts and between these employees and the staff functions. This approach implies that the social innovative change process does not replace the technical innovation but instead it facilitates it (Verhoeff, 2011).

The first inquiry by the researcher focused on the interactions between the management and employees (i.e., vertical communication) and also on the interactions on a horizontal level between district managers and the functional groups within these districts. On the basis of 11 interviews and an online questionnaire, it was concluded that a perceived information and communication gap existed both vertically and horizontally within the organization. This was discussed with the manager of Housing and subsequently it led to a new step in the change process in which two functional groups, in particular the district coordinators and service engineers, became the focal groups. The service engineers are the representatives of the new customer oriented strategy because they work closely with the customers on a daily basis. With primarily a technical background (both in education and work experience) these service engineers were expected to change their way of communicating and acting by learning a more customer-driven behavioral repertoire. Instead of their familiar technical orientation, new skills and more customer oriented behavior were required. Commercial insight and sensitivity to customers' demands should prevail over technical or procedural driven approaches. Compared to the previous two cases, which both focused on an internal technical innovative change, such as implementing the Tablet PC and MRO system, this particular change process focused on the housing association's external customer as well as the change of behavior necessary for the service engineers to be able to embrace this social change.

The intentional context
The intentional context refers to the non-overt, implicit assumptions of individuals and the way this is expressed in their motivation. In this case most of the employees worked in the organization for quite some time. This was because the two housing associations had merged in 2005, and both had different corporate cultures. Some of the interviewees still recognized these different organizational cultures in the specific behaviors displayed by the employees. Over time more young employees have started working in the organization and a kind of hybrid organizational culture was gradually developing.

The old habits and local conditions had gradually shifted towards creating a new set of habits and local conditions as well as the adaptation of corporate rules (see Fink in Ulijn, 2008). Within the housing association, two types of employees can be identified. First, employees who found it was their social responsibility to make neighborhoods better places to live and to support those tenants who were (financially) weaker. Second, employees who found it was their responsibility to focus on the technical aspects that are related to maintaining the housing. In this research project we are not focusing on the individual beliefs and motivation of employees. Instead we focus on the interaction and the language of the service engineers, district coordinators, and district managers. Employees in the two key groups possess both the social and/or technical orientation as described above, combined with the potential of SI and TI.

As said earlier the organization context of this case can be positioned as an innovative, decentralized and connected organization with an egalitarian and people-oriented culture in which the Power Distance Index (PDI) and Uncertainty Avoidance Index (UAI) are low. Due to the minimum of two management levels the employees have the ability to be self-organizing. The management expects them to think for themselves and to judge what is right or wrong when decisions regarding housing and reparations have to be made. This case fits within a connected (island) culture mentioned by Ulijn and Weggeman (2001) as the incubator culture.
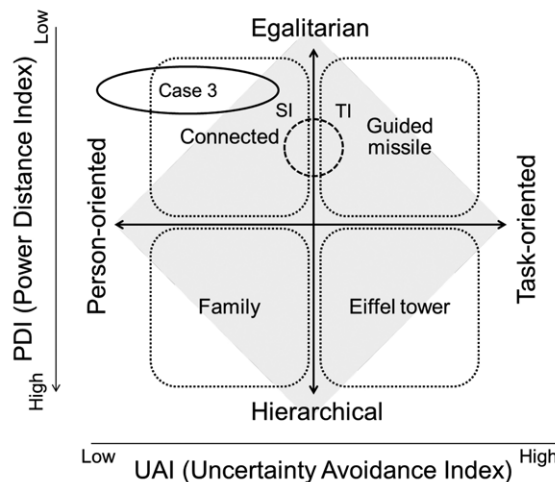
**Figure 7.2 Case 3 situated in organizational and cultural settings
(adapted from Ulijn and Weggeman, 2001)**

The position of Case 3 in Figure 7.2 above by the researcher was discussed on November 27, 2013 with four employees of the Housing Association; 1) Manager Housing, 2) District coordinator, 3) Service engineer, and 4) Team manager of the Housing and Building Services. During this session all agreed that especially the estimated score on the PDI (i.e., the acceptance by less powerful that power is distributed unequally in the organization) is low in the organization. The freedom to make decisions, having the responsibility to organize the work in the most optimal way and the possibility to take initiatives together with others requires a low PDI in the organization. Furthermore, the low estimated

score on UAI (i.e., trying to avoid uncertainty and ambiguity) was recognized by all participants of this session. Most of the employees are supposed to solve problems, and to think and act for themselves, which is one of the core competencies of self-organizing organization. When making mistakes this does not result in negative rewards, instead the situation will be discussed and all will learn from it.

Within this case study we can make a distinction between the following professional groups because they actually participated in the change process and they had to interact to make sense of the required strategic vision. First, these include the service engineers, second, the district coordinators, and third, the district managers including the manager of Housing, who are all responsible for the overall strategic vision to become implemented. The discourse analysis performed in this study is similar to the previous cases. First, semi-structured interviews were held with employees addressing the organizational, change and intentional context in order the acquire an understanding of the case situation. Second, we analyzed (formal) documents using a word count method, and third, we analyzed the spoken utterances of one informal conversation session by using the discourse analysis framework as described in Chapter 4. Overall participant observation and taking notes made the discourse analysis complete. Discourse analysis usually contains both written and spoken language, but written documents primarily reflect the formal (management) discourse of the organization while spoken language is more vivid. In this case the strategic vision document was also discussed and written by the management, and it was assumed that management ideas will be adopted by the employees (Sturdy and Grey, 2003).

7.2 Discourse analysis of documents, interviews and meetings

This case involved the development and implementation of a strategic vision for the service engineers of a housing corporation in the Netherlands. The change process was intensely followed over a period of nearly three years (2008-2010), in which the researcher worked closely with an internal consultant of the housing association, and participated in and/or observed the change process. This case provided a setting in which professionals at different organizational levels (e.g., management, staff, and shop-floor) could interact during a change process.

Data was gathered from (1) desk research (e.g., analysis of strategic written documents), (2) eleven semi-structured interviews, (3) observations during five interactive training sessions, (4) three informal meetings with employees, and (5) a feedback meeting with the management team after the training sessions. The interviews took between 30 minutes and 90 minutes. Transcripts of interviews were validated by interviewees. The interviews allowed us to collect in-depth narratives of the professionals' perceptions of the change process. We observed five interactive conversation sessions organized by the internal consultant in close cooperation with some of the service engineers and district coordinators. During the sessions different topics were discussed, and presentations were given by employees and managers as well. The researcher observed and made notes when attending the sessions. In addition, four informal meetings were organized with different employees and the researcher.

From these informal gatherings digital recordings and transcripts were made. During one of these informal discussions, with two service engineers and one district coordinator, we performed a detailed discourse analysis according to the framework described in Chapter 3. The utterances were

coded by six student-coders who were trained and informed in advance. They performed the coding under supervision of the researcher and as part of a change management course in their second year of the study management for small and medium enterprises (bachelor degree in engineering). We analyzed representative utterances according the discourse framework as described in Chapter 4 (see Appendices E and F). Next we describe the formal organizational documents available and which were relevant to this change context, followed by the semi-structured interviews, observations made during the training sessions, the informal conversations, and finally the feedback session with the management.

7.2.1 Formal documents, lexically analyzed

The word count analysis was performed on three formal written organizational documents. These documents were not formal project documents as was the case in Cases 1 and 2 since in this case no formal project organization had been put in place. However, these documents can be seen as input for the change process. There were various reasons for this. First, there was the housing association's annual report of 2008, secondly, a report was compiled concerning the level of service quality researched by an external company (Desan Research Solutions, 2008) according to the national legislation for rental housing quality, and third, there was the strategic vision document for the long term (e.g., 2010-2012). Apart from these three kinds of documents, there were also formal presentations which are used for discourse analysis to gain insight into the typical words used in formal organizational documentation.

For this analysis, *WordSmith* software was used. We specified typical content words first by excluding all kinds of function words such as *and*, *or*, *the*, *their*, and *it*. Second, we searched for the 10 most frequently-used words. The indication TI and SI between brackets behind the words refers to the type of innovation expressed by the word and this will be discussed in Chapter 8. Table 7.1 gives a detailed overview.

Table 7.1 Typical words in formal written documentation

Organizational documents			
Document	**Total words in document**	**Typical words**	**Freq.[26]**
Foundation's annual report 2008	20,249	Houses	36
		Project	35
		District	34
		Control	31
		Newly built houses	23
		Financial	22
		Result (SI)	21
		Board	18
		Risk (SI)	17
		Residents (SI)	12

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26 In Table 7.1 percentages are not used because the words represent a selected part of the total words.

Quality service level 2008	17,415	Customers (SI)	389
		Final result (SI)	341
		Rental house	331
		Association	257
		Delivery conditions	137
		Information	122
		Norms	109
		Results (SI)	98
		Point of measurement (SI)	90
		Complains	79
Strategic vision 2010-2012	12,801	Customers (SI)	96
		Employees (SI)	43
		Neighborhood	38
		Organization	38
		Living	37
		Society	30
		Performance (TI)	30
		Scenarios	25
		Information	23

Based on these three documents and the lexical analysis through word count, it can be concluded that a customer orientation is a central issue of the strategic direction for the housing association. In the associations' annual report of 2008, the word *"residents"* is mentioned 12 times. In the quality service level document (2008) we can see that the word "customers" has been mentioned 389 times which gives us a clear idea about the increased customer orientation of the housing association. The strategic vision document (2010), written by the management of the housing association, mentions *"customers"* 96 times and first mentions the *"neighborhood"* 38 times. The annual report of 2008 reflects the past years and is not very customer-oriented. The two other documents clearly reflect the strategic direction the social housing association would like to establish in the coming years. One of the changes resulting from this strategic vision is the change in mentality and behavior of the service engineers who have daily customer contacts with tenants in their district. This change in behavior is the focus of this particular case study.

These written documents also show, as in the previous cases, the use of quite abstract words (e.g., *project, financial, results, delivery conditions, organization, and performance*). Written language often uses abstract words, because there is no direct contact with the "receivers" of the written documents. The general idea which is conveyed in the documents is that there is indeed an increased tendency towards customer orientation, but the question to be posed to the management in this case was then: how can this shift in thinking and doing in the organization be achieved?

7.2.2 Semi-structured interviews with employees

The eleven interviews were held with the director responsible (1), the district managers (2), the district coordinators (3) and the service engineers (3) from different districts. In addition, we held interviews with the Manager of P&O (1) and the ICT manager (1). During the semi-structured interviews, we inquired about the organizational change and intentional context (see Chapter 3).

We found within these professional groups different perspectives between the management level and shop floor level. The quotes below show the differences concerning the change objective and approach, and they indicate the gap in the vertical communication. The language they used can be linked to their specific professional background. The quotes from the interviews which follow below serve as examples of such a gap.

Director: "*Our job as a management team is to develop a strategic direction, the 'WHAT'. These directions are like pictures that are not very sharp. With this uncertain direction we start discussions in the organization. Sometimes we received responses such as: OK, this is nice, we can handle this. But we also received responses such as: This is not good, we do not know what you mean. So the 'HOW' is developed by our employees. In this interaction and dialogue we gradually formulate the strategic direction. However, this can be different in the nine districts we have.*"

District Manager: "*Our service engineers have been working well the past twenty years; they had good evaluations for the work they did. Technically everything was alright. The last ten years many new developments gave other characteristics to their job. At this moment, we are working like a network organization, results count (what), but not the way how it is done. The new role of the service engineers is clearly communicated. Also the process redesign was taken into account. The consequence of this change is that certain responsibilities and tasks are shifting to other employees and departments.*"

District Coordinator: "*The change is about work attitude and behavior (e.g., more customer orientation), having a certain level of abstract thinking to see the long-term consequences (e.g., strategy, development of neighborhoods, and savings on maintenance costs). Communication about the change process is not very good. In fact, there is not much communication about this at all.*"

Service engineer: "*The tasks of a service engineer include about 50 percent administrative and 50 percent external, with customers in our neighborhoods. Our tasks have technical and social elements. Sometimes I hear that the change process means that all technical elements will disappear and only social welfare work has to be done. This is some kind of fear that the service engineers have. I do not think that is true. You always need some kind of technical know-how! Changes are always going on. Our Management Team does not communicate clearly change results or directions. From a vague strategic vision each district has to find out what it all might mean. About the specific change for the service engineers nothing is communicated.*"

The quotes display a variety in utterances about experiences with the change across the professional groups (director, district managers, district coordinators and service engineers). Although these employees operate at different hierarchical levels in the organization, they have a certain language use that is prominent in their professional role and unveils their professional culture which underlies the discourse level. In this vertical interaction between the hierarchical levels, both the professional discourse and culture interact, with both forming and being formed and affecting the discourse styles when interacting. The director strongly focuses on the long-term organizational vision and her way of implementing that vision. The district managers adopt this vision quite easily because they were involved in the process although they continue to use abstract language. Both the director and district manager are sure about the clear communication. The district coordinator especially refers to social innovation (i.e., the *other characteristics*) and on technical innovation (i.e., the *process redesign*). In this *'network organization'* employees know what is expected of them and

management does not interfere with all the details, so they give general directions and hope that the message is disseminated throughout the organization.

This finding fits within the innovative, network culture as depicted in Figure 7.2 above. The district coordinator is still able to understand, but finds communication about the change poor. He is fulfilling the linking pin role between management and the service engineers by translating the strategic vision into operational and workable guidelines for the service engineers. Finally, the service engineers, who have to relate the strategic vision to their daily work having a clear perspective of their own job, mention no communication at all regarding the change process. With regard to the professional groups, the managers are mainly searching for the general picture and they soon decide to adopt abstract reasoning. District managers are quite similar and they also try to search for the general direction in which the company should go. Service engineers are more focused on the actual work, and on detailed information about their jobs.

Except for these differences in 'vertical communication' between the social levels, the interviews with district coordinators and service engineers working in different districts also made it clear that perceptions regarding the change process were not aligned horizontally. The service engineers did not know much about other new tasks (e.g., budgeting, maintenance costs, and mid-term neighborhood plans) that became a part of their job when the strategic vision was completely implemented. The quotes below represent that both the district coordinators and service engineers are in general missing information. The difference with the district coordinators might be that the service engineers have a need for more detailed information.

District Coordinator (1): "*We see sometimes tensions between the districts. This is because they work differently and have other ways of interpreting the procedures. This makes understanding difficult for service engineers.*"

District Coordinator (2): "*Service engineers working in a different district have no regular meetings across the districts. Within their own district they talk with colleagues but there is no structured information about changes of the organization as a whole. The district manager should provide us with this information.*"

Service Engineer (1): "*We must understand the consequences of our actions and decisions. I believe this is sometimes difficult because we do not know all the details and sometimes the information system tells us to work in a specific way.*"

Service Engineer (2): "*We do not have many written rules or procedures. Each employee has a lot of responsibilities and is free to act according his own insights. Sometimes, even within one district, we have different ways to solve a problem for a customer. It would be very useful to have a kind of training about strategic issues, because we do not know much about these topics.*"

Service engineer (3): "*Each district can make its own detailed agreement with customers. This is sometimes very confusing. We miss the collegial communication with other service engineers from other districts to learn from each other more efficiently. Also some guidance in how to write a strategic neighborhood plan would be nice. I know other collogues have written such a plan, but I have never seen it.*"

The interviews indicated the autonomous way of working in the nine districts, and also the need of service engineers and district coordinators to receive more information about the implications that the long-term strategy has on their daily work. The interviews made it clear that there was both a vertical and horizontal communication gap that needed to be addressed in order to create more alignment in the organization regarding the strategic vision. The service engineers in this case are used to doing administrative work, which is a part of their job, but this is in contrast with the service engineers in Case 2, who hardly did any paper work at all. It might be the case here that the service engineers are more acquainted with the paper work in combination with their technical orientation. The district management, coordinators and service engineers are working in the same district, and are used to work both in the office and in the homes of the tenants taking notes for the necessary repair work.

Together with several employee representatives, district coordinators and managers, the development of interactive conversation sessions was started. The goal of the interactive sessions was to improve mutual understanding and sensemaking both vertically and horizontally. During the sessions different themes were presented by managers, coordinators and service engineers. Without exactly knowing what the outcome might be of the sessions, the general belief was that at least this could create a platform for conversations across the organization.

It can be concluded that there is an apparent need for a better alignment of the vertical (e.g., between the hierarchical levels) and horizontal communication (e.g., between the different districts) within the organization. This was clearly shown in the interaction which revealed that there were differences found in the degree of information about the strategic vision. Also the differences of professional discourses between the (district) management and the service engineers during the change process showed that a gap had to be bridged. The next section describes the organized conversation sessions in order to achieve and harmonious change process within the organization. Section 7.3 is about how the conversation sessions were organized over time and what kinds of reactions emerged during these conversations.

7.3 Formal conversation sessions with employees

Based on the observed vertical and horizontal communication gap, a program was organized around the strategic vision and the desired change in the service engineers and district coordinators' behavior. The conversation sessions in this case had the goal to meet, exchange information, talk about the new strategic vision, and to be informed about, for instance, budgeting, maintenance costs, and mid-term neighborhood plans. The five interactive sessions took place over a period of five months and the participants were scheduled to attend either a morning or an afternoon session (approximately 20 participants) which lasted four hours. Before the sessions started service engineers, district coordinators, management, and staff could give input on topics they wanted to discuss with regard to the strategic vision. During the sessions the following topics were discussed: the position and role of service managers, portfolio management, budgeting and maintenance costs, strategic planning for neighborhood development, customer orientation, advice and sales negotiations. Each session was set up in an interactive manner with individual and group assignments and time to reflect on the actual work of the service engineers and district coordinators. Between sessions the employees of different districts were allocated to make cross-

district group assignments. The results of these assignments would be the input for the next conversation session.

The main purpose of the sessions was to give employees a better understanding of the strategic direction that the housing association was pursuing at all levels (to increase vertical communication). The sessions were also set up to create mutual understanding and to increase the interaction between the employees working in different districts (i.e., to increase horizontal communication). After each session, each participant was required to fill out an evaluation form with several general and specific questions regarding the topics that had been discussed. The results of these questionnaires were used as input to organize the next session. Table 7.2 shows the dates of the sessions, the number of evaluation forms that were returned by the participants, and the main topics discussed each session.

Table 7.2 Conversation sessions with employees and topics discussed

Conversation session (date)	Number of evaluations	Main topics discussed
25 Jan 2010	30	Role and position of the service engineer Budgets and maintenance costs The role of service engineers in portfolio management What do we expect from the service engineers? Assignment 1: Make an advertisement for a new colleague
16 Mar 2010	35	Discuss assignments Methods to make a neighborhood plan Case of neighborhood plan district Stratum Measurement of housing conditions with ICT system Assignment 2: Discuss an existing housing plan
22 Apr 2010	32	Discuss assignments Three cases of mutation and repair costs Estimate cost for mutation and repair work Influence of maintenance costs on long term budgets Assignment 3: Make an estimation for repair work
25 May 2010	22	Discuss assignments Customer orientation; who is our customer? The service engineer does not sale, but listens… Discussion about clean and safe housing Assignment 4: List 10 issues for clean and safe housing
24 Jun 2010	34	Service engineers as internal clients from building services Tasks and responsibilities from purchasing and contractor Experiences of one of our contractors What is a good written assignment for the Housing and Building Services?

The five sessions are reported in more detail starting with the first session about the role and position of the service engineers. In this first session the manager of Housing started the discussion by telling a story about the reasons why the strategic vision had been developed and what the long term goals were. In the second session, the planning of housing and maintenance was discussed on a strategic level, while the third session focused on the awareness of costs and expenses due to repair and maintenance. In the fourth session the central topic was about customer orientation and the shift towards customer driven activities. This was a difficult session because in a role play with an actor the service engineers were invited to show their "sales" skills, which was not their natural behavior. The closing fifth session was about the service engineer in the role of the internal client for the Building Services Department, which can be seen as an internal contractor. The five interactive sessions were very informative and employees said that they had learned a great deal, not only from the presentations but also from their discussions with colleagues. Especially the information about cash flow (third session) and the long-term result (second session) was new to most of the service engineers.

One service engineer remarked that he "*now understood what the financial impact was of his decision to repair a wall or replace a kitchen.*" During the second session it became obvious that service engineers never had to make a long-term maintenance plan, but after this meeting they were more aware of the long-term plans for the houses in their district. Service engineers reported that they had gained *"new insights about customer value related to neighborhood development."* The third session about maintenance and repair costs and the role of the service engineer in that process was greatly linked to the daily activities of service engineers. With pictures and movies made by other colleague service engineers, examples of the renovation of older houses, the replacement of kitchens and bathrooms was discussed. Often service engineers were not aware of the actual costs associated with such maintenance in the houses, as they only gave directions to the Building Service Department to do the work and checked the follow up process. One service engineer said that "*he now understands the importance of budgeting and in the future will take costs into account when making decisions for maintenance.*" The role play with a 'customer' during the fourth session was difficult for most of the service engineers because the negotiation process and offering different options for the customer while, at the same time, keeping the organizations' interests in mind was very difficult for the service engineers to do. One service engineer said, "*I am not good at selling a new heating system when knowing it is technically not the right thing to do at that moment for the tenant because of other important things that must be done first, for instance improving the isolation of the house.*"

This different perception, compared to marketeers for instance, about 'selling' in relationship with customer service seems to be difficult for service engineers. It seems to be a contradiction in terms for the service engineers as it is possible to do technically the best for the customer, while at the same time the 'selling' of something beneficial for the organization is possible as well. Many service engineers felt that it is not right to sell things to a customer that s/he actually does not need or what is technically not the best option. The service engineers wanted the best technical solution for the customer and they seem to think that they are the ones who can determine what is best for the customer and good for the organization. But in fact, it was the goal of the strategic vision to turn that around, and allow the customer to decide what s/he wants. The service engineer had to become more customer oriented and at the same time keep the organizational interest in mind. Most service engineers found this shift in behavior difficult, which might be a typical perception

within the engineering profession. During the fourth session a role play with an actor playing the customer showed that this behavioral shift would be hard to reach. The service engineers do not see themselves as 'account managers' listening to the customer (i.e., the tenant), Instead they want to focus on the technical state of the houses.

In the fifth and final session, the service engineers defined the content of the order and the expected result when placing a repair or maintenance order at the Building Services department. It was the job of the service engineers in the new strategic vision to put in the order and to coordinate a follow up on the order. Service engineers now need to keep track of the execution of the order and several service engineers said "*this seems easy but we are not used to describe a repair or maintenance order in clear language. What we want is obvious, but how to put that on the order is difficult.*"

The description above gives an impression of the five conversation sessions, although for this study it is superfluous to report the details of all of the topics discussed during the sessions be understood. For this study it is important to understand the effect of the different discourses of the professional groups when they interact in the change process. The strategic vision has resulted in bringing about the required shift for the service engineers from having to shift from an operational/technical orientation to a tactical/customer orientation. The service engineers are the ones who have to make that shift in order to fulfill the management's strategic vision. During the conversation sessions, different employees (internal and external) gave presentations, led discussions, and talked about financial planning and budgeting, about neighborhood development in the city and the plans that had been made. The most important goal of the sessions was to meet, to gain mutual understanding about tactical topics and to discuss this with the management and colleagues from other districts. Perhaps these conversations could reduce the resistance to change by creating a better understanding of the strategic vision and the consequences this could have on the daily work of the service engineers.

To give an impression of the conversations during the sessions, the utterances of the attendees were transcribed during participant observation by the researcher who attended all of the sessions as an observer. Some of the responses which were given on the individual evaluation sheets have also been taken into account.

Manager of Housing: "*To get you talking I will give some input upfront about the old and new language for service engineers. In the old days words like 'execute', 'fixing it', 'making an order', 'explain', and 'reporting' were common. In the new days we will use words like 'plan', 'choose', 'advice', 'show', 'discuss', and 'involve' which give a picture of the expected behavioral change of our service managers. So a more strategic kind of behavior is expected.*"

Service engineer: "*We have to take the actual situation into account; what is needed at that moment. Not everything can be known upfront.*"

Controller: "*Our maintenance costs are twice as high compared to other social housing associations. What is the reason for this? What is our guiding principle when making decisions about repair and maintenance?*"

District manager: *"I agree, it seems like we are doing less maintenance, but despite this we have higher maintenance costs. Perhaps we should present the figures differently and give more details about specific cost. Also some financial guidelines would be helpful."*

Service engineer: *"If this is the point we should have some say in this all. I have done an assessment in my neighborhood and I gave advice on maintenance, what must be done and what would be nice for our tenants. But it seems that some other colleagues* [from the Building Services] *decided to do it otherwise. So my influence is limited, really! My colleagues working on 'the other side' should listen to my advice."*

In one session the service engineers worked, as an assignment, on a text for a job advertisement for their own job positioned in the future state of the new strategic vision. This assignment was meant to have the service engineers contemplate on their new roles in the near future and how they would position themselves when a new colleague had to be hired. Quotes from the discussion show the focus from the service engineers on the technical aspects in their jobs while they all know that this will be less important in the future. However, it entails the current perceptions of the service engineers regarding their jobs and it also reflects their professional backgrounds, their discourse and their culture in a cooperative interaction.

After the assignment had been completed, the HR manager asked an open question: *"How specifically did you discuss the technical aspects of your job in the vacancy?"*

Service engineer: "*We discussed it, but we did not put it in because we think it will become less relevant in the future. But if we should really hire somebody without technical knowledge we think it will not work."*

District coordinator: "*I assume that the technical knowledge is still necessary for mutations in maintenance, but less important for our service engineers.*"

Service engineer: *"Yes, perhaps we can make a technical manual in which the basic technical knowledge about housing is explained, a kind of 'maintenance for dummies,' that might work."*

The quotes above depict the various perceptions of the service engineers about their technical backgrounds and professional culture. Most of the older service engineers are strongly attached to their 'technicality', and cannot imagine how to do the job without that. This interpretation by service engineers also formed a base for their resistance to the change. However, younger service engineers, mostly the higher educated, but less technical, are not that attached to this technical background, and can understand the new vision. In contrast, district managers and coordinators make hardly any reference to the technical orientation. Technical knowledge is hardly necessary in their daily work. This might explain why they have a different view of the service engineer's job characteristics.

Concluding the conversation sessions
The conversation sessions increased the awareness of the participants concerning the gap in both the vertical and horizontal communication within the organization. Differences in professional discourse related to the different professional groups and their discourse styles emerged during the

interaction that took place in the conversation sessions. In these sessions strategic visions, policies, and the effects on the shop-floor level were discussed, and at the same time, the participants obtained a better understanding of the perceptions of colleagues on specific topics, and in between the sessions they were able to work together on specific work-related assignments, which resulted in a better horizontal communication. The presentations of colleagues from other departments and the various social levels in the organization (i.e., management) increased the vertical communication, the sensemaking, and created a richer picture of the organization's long term vision.

The observations delineated that the first discussions which were held with the service engineers were rather ad hoc. This was also observed in the previous cases and especially in Case 2 when the service engineers needed a protocol or 'rules for discussions' to remind them about their discourse habits which are related to their professional culture. Nevertheless, in this case the discussions became more constructive when employees had open dialogical conversations without specific agendas and time schedules. There are indications that the increased awareness of the different professional discourses between the managers and the service engineers (i.e., vertical), but also between the service engineers (i.e., horizontal) made cooperation among employees more successful. As a result of the sessions, the employees gradually learned to understand and accept differences in discourse styles because they knew the professional culture of the person talking and in this way they gained more trust to speak openly. Both the management and the employees respected each other's ways of thinking, taking time to try and understand what the others were saying, and during the conversations trust gradually increased. This suggests that the misunderstanding of professional discourses, combined with the unawareness of a strategic vision, which was presented in a too abstract way, were indeed important reasons for the slow change in the service engineers' required behavior. These findings provide additional, albeit circumstantial, evidence for our argument that the differences in discourse styles found among the professional groups can be linked to the effectiveness of change and the underlying professional cultures which in turn might have caused misunderstandings.

Generally speaking, the sessions were highly interactive and the service engineers had lively discussions with each other, with the presenters and with the management. It was also clear that most of the service engineers had different perceptions (i.e., referring to the intentional context) about how to solve a problem, how to respond to a customer, how to explain his implicit 'decision-rule' and how to decide on the best option compared to the district coordinators and managers. The general evaluation of the conversation sessions showed good results, and an average of 79.4% of those involved said that they (n = 41) would advise their colleagues to participate in these sessions. Most of the discussions and presentations were evaluated as being very good and the attendees appreciated the open/safe learning environment and the interactive discussions with district managers, the coordinators and the service engineers working in other districts. Observations showed that the horizontal communication (i.e., discussions with colleagues from other districts) and the vertical communication (i.e., discussions with managers) were both positively influenced. Also the district managers and coordinators mentioned that they had other conversations with their service engineers and got more long-term related questions regarding maintenance plans or budgets.

The conversation sessions somehow had a formal character because there were approximately 20 participants per session who had been invited to join and naturally the management knew

who had attended or who had not. Off the record (during lunches, coffee breaks, and afterwards) informal conversations also show other, less positive results which led the researcher to decide to invite groups of employees after the fourth conversation session for an informal, non-structured conversation.

7.4 Informal conversations with employees

After the fourth conversation session had been held, a total of four informal meetings were organized by the researcher to discuss the conversation sessions until later when the change process had already begun and a final fifth session still had to be planned. This was done because of the contradictory discussions which took place sometimes during the coffee breaks (i.e., informal), which were in contrast to the formal conversation sessions. The four informal meetings were attended by sixteen employees in total, digitally recorded and fully transcribed. Discourse tools (as described in Chapter 4) were used to analyze one of the conversations. In the meeting two service engineers (SE1 and SE2), and a district coordinator (CO) talked about the change process and how they had experienced the four interactive conversation sessions. This meeting was not pre-structured by the researcher and every input of the attendees was possible. Appendices E and F show the detailed results of the speech acts, negotiation strategy and utterances in the conversation phases for each role and are presented in an aggregated form in Tables 7.3, 7.4 and 7.5. These utterances reflect the most important turns in the conversation and are summarized in the final column.

Table 7.3 Classifying speech acts counted per professional role

Speech act	Service Engineer (1) (n = 1)	Service Engineer (2) (n = 1)	District Coordinator (n = 1)	Total
Assertives	9	3	4	16
Directives	2	1	2	5
Commissives	-	-	-	0
Expressives	12	4	6	22
Declarations	-	-	-	0
			Total => minus 7 double counted	43[27]

Table 7.3 shows that both service engineers (9 and 3 items) use assertives (claims supported by evidence) which is in line with our earlier findings in Cases 1 and 2. Cases 1 and 2, indicating that their professional discourse and culture is based on proof and evidence, which is naturally appropiate in a technical Newtonian world, but less so in a social human world. We also noticed that during this meeting no commissives (making promises, responding to a request for future action to be taken and showing commitment) were used by the participants. The use of expressives (feelings about guilt, personal problems or making apologies) is noteworthy. This indicates that

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27 The total number of codes (43) is higher than the number of actual utterances (36). Some utterances were coded with more than one speech act. This explains why the total amount counted is higher than the 36 utterances. The Appendices E, F and G give the details.

there is an 'open culture' in which people trust each other and they feel safe to express themselves. Nevertheless, some of the utterances that were made by the service engineers (see no's. 6, 7, 28 and 29 in Appendix E) clearly display their "off-stage" behavior (Homan, 2005). The absence of commissives (i.e., showing commitment) is undesirable, but understandable in this particular informal setting of the discussion.

Next the discourse analysis will focus on the negotiation strategy and communicative support which was observed during the informal meeting held between the service engineers and district coordinator.

Table 7.4 Negotiation strategy and communicative support counted per professional role

Negotiation strategy and communicative support	Service Engineer (1) (n = 1)	Service Engineer (2) (n = 1)	District Coordinator (n = 1)	Total
Non-cooperative	6	0	3	9
Cooperative	3	1	5	9
General	2	1	4	7
Meta-communication	13	3	4	20
Total => minus 9 double counted				45[28]

Table 7.4 depicts that Service Engineer 1 used many utterances in his negotiation strategy that show non-cooperativeness (6 items). This is also in line with our findings in Cases 1 and 2 in which many service engineers basically responded by using a non-cooperative negotiation strategy, which is often attributed by the management as representing resistance to change. But from the position of the service engineer, it seems to be a typical discourse style in which one is critical and which is used to diagnose the true problem in order to solve it in a more cooperative way.

The district coordinator uses also non-cooperative (3 items) and more cooperative (5 items) speech acts. The district coordinator also uses more general communication (4 items) which implies that he uses supporting and concluding utterances. Both types of speech acts fit with his coordinating role and less technical orientation. What is particularly interesting is the meta-communication (13 items) by one of the service engineers which implies that he is able to summarize, conclude or remember what other participants have done. However, this is not in line with the findings in the previous two cases. The overall gist of the conversation shows that the service engineers are not completely convinced of the strategic vision and that they would like to see evidence or they feel that the district coordinator and/or managers should be able to answer their detailed questions and that they can explain what the consequences the strategic vision will have on their daily work. But, on the other hand, the service engineers do not want the management to prescribe how they should do their work as they still would prefer to keep their freedom. Finally, Table 7.5 shows the results of the utterances performed during the informal meeting in regard to the conversation phases.

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28 The total number of codes (45) is higher than the number of actual utterances (36). Some utterances were coded with more than one negotiation strategy and/or communicative support. This explains why the total amount counted is higher than the 36 utterances. The Appendices E, F and G give the details.

Table 7.5 Conversation phase counted per professional role

Conversation phase	Service Engineer (1) (n = 1)	Service Engineer (2) (n = 1)	District Coordinator (n = 1)	Total
Initiative	6	0	2	8
Understanding	12	5	10	27
Performance	1	-	1	2
Closure	4	-	3	7
Total => minus 8 double counted				44[29]

The service engineers (respectively, 12 and 5 items) and the district coordinator (10 items) use many utterances representing the understanding phase of a conversation which may indicate that the strategic vision is not that clear to the participants. This was also found in the two previous cases and may show that the service engineers are missing clear explanations by the district coordinator on their detailed question, which could lead to the necessity for more understanding, thus produce utterances that relate to the understanding phase of the conversation. In the service engineers' culture mutual understanding is important, especially when solving (technical) problems. This professional culture is reflected in the professional discourse (i.e., assertives) of the service engineers and accounts for the scores in the understanding phase of the conversation. Table 7.5 also shows that both the service engineers and the coordinator hardly ever reach the performance and closure phase in the conversation. This indicates that the differences in discourses of the participants in interaction hamper the conversation.

Finally, it is concluded that the discourse style of service engineers is characterized by the use of assertives, hence requesting that there be evidence or proof from the management in regard to their detailed questions. Due to their professional culture, the service engineers want to understand the situation, as this was established during their technical education and they have learned that strict linear thinking is necessary in order to diagnose and solve (technical) problems. The use of assertives and discussing things with one another in order to understand a situation is reflected in this case, as well in the previous cases.

7.5 Feedback meeting with management

The semi-structured interviews, interactive conversation sessions and informal conversations with employees indicated that the 'horizontal' and 'vertical' communication deficiency indeed existed and that the five interactive conversation sessions bridged this 'gap.' In the past five months, many of the (district) managers were not fully aware of the actual status of the change process and during the five interactive sessions, the actual conversations started to change, taking on another character, with the cooperation between the employees working in different districts having improved. The district managers noticed this change in conversation style and they also saw that the

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29 The total number of codes (44) is higher than the number of actual utterances (36). Some utterances were coded with more than one negotiation strategy and/or communicative support. This explains why the total amount counted is higher than the 36 utterances. The Appendices E, F and G give the details.

service engineers had asked different questions which were related to a more tactical level, which in fact was one of the strategic vision document's goals. The manager of Housing initiated a formal feedback meeting with the district managers to address this status update. The main point discussed during this meeting was how the district managers could continue to support the service engineers and the district coordinators in carrying out their behavioral change. Next this formal meeting held with the district managers is described.

In September 2010, the formal feedback meeting was organized to inform the (district) managers about the results of the semi-structured interviews, the interactive conversation sessions and the informal meetings with employees. The researcher presented his findings and the manager of Housing 'synchronized watches' again with the responsible district managers so they could continue the change process from there. In general, the managers recognized a change in behavior of the service engineers. They perceived a change in their conversation topics, but the contradictions were also noted. Service engineers have a drive for individualism and freedom in autonomous decision making. It is also quite common for them to ask for clear directions, and prescribed procedures or written process documents. Service engineers are also 'doers' and 'hands on', while the shift is about abstract and long-term thinking on a tactical level instead of an operational level. The formal responses on evaluation forms during the conversation sessions differed from the content of the informal conversations. In the formal setting the service engineers seemed to be positive, while in the informal setting they were quite negative about the change. Trust and fear of (managerial) repressions are mentioned as reasons for this behavior. Finally, the service engineers prefer to discuss things with their peers (e.g., horizontal communication) instead of with their managers (e.g., vertical communication). This differs per district and it depends on the relationship between the service engineer and his district manager.

This case, which is different from the two previous cases because of the interactive sessions, illustrates that a conversation platform was created for the service engineers to talk and discuss their work with their direct colleagues, with the district coordinator, managers and staff. This improved the horizontal communication with the other service engineers, but it also produced insights from other perspectives (i.e., the financial and asset perspective). Moreover, the conversation created discussions with the managers and employees from staff departments, hence increasing the awareness about more tactical issues in the organization which improved the vertical communication. All in all, the five conversation sessions created polyvocality (Linell, 2009) in a dialogical way and in doing so, they supported the change process in the organization without a strict planned change approach, but instead creating an interactional learning approach in which new topics could emerge.

The change process in this case started as a social innovation, instead of a mere technical innovation in the two previous cases, creating a change in the service engineers and district coordinators' behavior by changing their awareness and assumptions aided by 'just having held several talks.' The change intervention was organized in order to create an open conversational platform (i.e., the five interactive sessions) to allow colleagues to connect, to understand and to make sense when listening to other perspectives (i.e., creating polyvocality). The formal strategic vision written by the management was the starting document which appears to have fuelled resistance to change, because it was abstract and not aligned with the service engineers' perceptions. The reactions and discussions of the service engineers in the organization were diverse and in a first instance

seen by management as contra productive towards the desired change in the organization. Nevertheless, management did not react in a strict and top-down manner, but instead started the open conversations, listened to the reactions and gave the service engineers the responsibility to gradually internalize the strategic vision in their own daily practice.

The discourse analysis that was made of one informal meeting shows that the service engineers use assertives (9 and 3 items, see Table 7.3) and that their non-cooperative negotiation strategy (6 items, see Table 7.4) may come from their professional culture in which diagnosing technical problems and solving them in the best way requires an understanding of the situation and that detailed questions be asked until the situation has become clear to them. This basic approach of the service engineers leads them to analyze the change situation as if it were a technical problem. Management experiences this as resistance to change, but in fact it is simply the service engineer's response to the managers' abstract answers to their detailed questions. In this situation, it is obvious that the differences in professional discourses in interaction do not create the necessary mutual understanding and the desired change. The professional habitude of the service engineers to desire clarification is seen in the utterances in the understanding phase (12, 5 and 10 times, see Table 7.5) in conversations, and leading to the poor scores obtained on the performance phases of conversations. However, in this case the participants did reach the closure phase (4 and 3 items, see Table 7.5) indicating that they could proceed further with their cooperation. All together, the detailed discourse analysis indicate that the differences in the professional discourse and culture of participants have a great effect on the change process and needs to be addressed in an open dialogical way.

7.6 Summary and conclusions

Similar as in the two previous cases we will answer the subquestions for this third case as well. First the subquestion related to the *organization and change context of the case.* The organization context can be characterized as an connected island structure represented by the nine different district which are responsible for all the activities in the neighborhood. The organization is person oriented with a minimum of two management layers. The PDI between (district) management, coordinators and service engineers is low compared to Case 1. The UAI is considered as low because employees have the freedom within their work to make decisions freely without many strict procedures and regulations. Management often explained that this is also what they expect from the employees. The interview with the Director (see Section 7.2.2) mentioned that *"the strategic direction is presented as a picture, but not very sharp. With this uncertain direction we start discussions in the organization."* This implies that management follows a dialogical communication approach and accept differences at the shop-floor level in the nine Districts.

In line with the organization context also the change approach is different compared to Case 1 and 2. The change context was set up to create interactional learning among the participants including unforeseen topics to emerge. The conversation sessions were of course planned upfront but the discussions during and the outcomes of these sessions were not seen as manageable. More specifically, further steps to be taken were determined after every session and in that sense the change project was not following a strictly planned change approach as in the Cases 1 and 2. Nevertheless, the change project started with the initiative from the (district) management to

develop the new strategic vision in which customer focus had to be improved. The Manager of Housing (see Section 7.3) stated this initiative in one of the conversation sessions by saying that *"the service engineers will have to learn a new language. In the old days words like 'execute', 'fixing it', 'explain', and 'report' were common. In the new days words like 'plan', 'choose', advice', 'discuss', and 'involve' represent the new behavior of our service engineers."* This way of thinking about change made it possible to develop a conversation platform for service engineers, district coordinators and managers in which sensemaking could take place. The interactive sessions lasted for five months and in between the interaction was stimulated by giving cross district group assignments. By doing this, a safe learning environment was created in which service engineers could discover what their new work would lead to. This approach is discussed in Chapter 2 and explained the open-ended, learning process instead of just changing organizational structures and practices (Burnes, 2009).

The second subquestion focused on *the PC and PD of the interacting participants* and is analyzed using the same methodology as in the previous cases (see also Chapter 4). First, the lexical analysis (i.e., word count) of the formal organization documents revealed that increased attention was paid to customer orientation (see Table 7.1 for the words *'residents'* and *'customer'* increased from 12 times in 2008 to 96 times in 2010). This was the main driver for implementing the required change in behavior of the service engineers. Of course this is a formal written document indicating the PD of the management that wrote these documents.

Second, the quotes taken from the semi-structured interviews showed both the vertical and horizontal gap in the communication, thus indicating that the communication between 1) the management and the service engineers and 2) between the service engineers working in different districts had to be improved with regard to the proposed change. Management described the new vision as *"developing a strategic direction like blurry and not sharp pictures"* while the service engineers commented on that with *"our management does not communicate clear change results or directions."* Everything in between this represents the gap in vertical communication between the different hierarchical levels. Furthermore, the interviews revealed a gap in horizontal communication because of the nine districts that operate in an isolated way, hence representing the connected island culture (see Figure 7.2) within the organization. Some quotes of District Coordinators (see Section 7.2.2) mention that *"work between Districts is often done differently because interpretations made by the employees are different"* but also some service engineers stated that *"there are not many written rules or procedures. Each employee is free to act according his own insights. Discussing with colleagues is than important, but that is only done within a District."*

The connected island culture seems to be disconnected at the same time. The literature in Chapters 2 and 3 mentions the difficulties in the vertical communication which seems to fit in the hierarchical organization structure. However, in networked organizations with an island culture it might be more important to focus on the difficulties in the horizontal communication, such as the communication between the different districts. This could be an additional point of interest for management research especially in today's organizations, which are increasingly flattened and less hierarchical.

Third, the syntactic speech acts analysis performed in this case study (see Table 7.3) illustrates that service managers predominantly resort to assertives (9 and 3 item) and expressives (12 and 4 items), while the district coordinator used fewer of these utterances (4 and 6 items). A lack of reflection upon these different professional discourses probably caused some misunderstanding among the professionals in this organization. More interesting might be the missing of commissives by both the service engineers and the district coordinator, which suggests a lack of commitment among the participants.

Fourth, the discourse analysis regarding the negotiation strategy (see Table 7.4) indicated that members of one professional group (i.e., the service engineers) in particular expressed their reservations concerning the role of management in the change process, leading to a non-cooperative negotiation strategy (6 items) and difficulties in establishing performing and closing conversational phases (see Table 7.5).

The analysis of the evaluation forms evidenced that about 75% was positive about the conversation sessions, while in informal settings the utterances were identified as being non-cooperative and that they used more meta-communicative support in the communication. It seems that the actors negotiate and complete the actual situated meanings of their actions and behaviors as described in the literature by Linell (2009). By using the discourse analysis framework of this study these theoretical insight can be evidenced empirically. Nevertheless, the use of meta communication should not necessarily be perceived as bad. It can help the managers to facilitate the communication between the different professional groups. However, when it is not explicitly thought of by managers, it might account for the fact that many discussions did not extend beyond the understanding conversation phase.

In the third subquestion we asked if a *difference between PC and PD of different professional groups can be a cause of resistance to change?* Overall the data suggest that interaction between different professionals using different discourses can be a source of misunderstanding, and as a consequence the professionals' communicative behavior seems to impede cooperation. One district coordinator stated that *"sometimes tensions between the districts are felt making it difficult for service engineers to understand what they have to do."* Some service engineers state that *"collegial communication is limited between the different districts, which is confusing for them because they cannot learn from experiences of colleagues in the other districts."* This misunderstanding and non-cooperative behavior are often seen from a management perspective as sources for resistance to change.

The fourth subquestion investigates the *cultural context factors, such as the interaction between OC and PC, and how that affects the organization change.* Figure 7.2 positions this third case as an egalitarian and person-oriented organization culture making it possible to have dialogical conversations about many issues in the organization. This organization context combined with an open and constructive PC of the managers facilitating a dialogical conversation with the service engineers seems to be beneficial in the change process leading to a successful change result. This was also confirmed three years later in the evaluation session. As discussed in the literature the theoretical lens of the emergent change perspective combined with a dialogical communication process is expected to be more appropriate in realizing change success. This third case seems to confirm these theoretical insight with empirical data.

The fifth subquestion wanted to know *if DA can be useful to understand the organization change result.* Based on the findings in this case, and the previous two, we can conclude that DA is helpful to understand interaction processes and sensemaking of participants in change processes on the syntactic level. DA makes it possible to investigate communication at a very detailed level which really digs into the words and sentences that are used by participants and what other do with it. Communication is often mentioned in the change management literature as the most important aspect in change projects, but it seems that taking an discursive approach and performing DA, as done in this study, is much more than just communicate. Communication in change processes is mostly considered as sending the same message over and over again by the change agents, while at the same time not being able to listen to the messages of the change objects. This study suggest that communication should be more about trying to create dialogues, really understand the change objects, knowing their professional culture, and being able to co-construct meaning in the interaction. Furthermore, communication is also about asking questions, be skeptical about one's own professional assumptions, and being open to others.

Finally we asked in the sixth subquestion if *DA can lead to additional insights concerning the interaction between OC and PC as to benefit TI and SI?* For answering this question we coded the words counted in the organization documents (see Table 7.1) and the utterances from the different meetings (see Appendix G the third case). For the counted words we labeled 9 words as SI and 1 word as TI indicating that the written documents pay more attention to social aspects. The utterances give a similar result with 9 utterances labeled as SI and only 1 with TI. The reason for this might be found in the typical sector of the Housing Association with a strong focus on social housing and neighborhood development. However, these utterances were performed by the service engineers having a technical background.

The organizational change process can be accelerated when the differences in the professional discourse and professional cultures are acknowledged from the very beginning and that in this way problems can be remedied during the implementation program.

Measurement of the change result

In the session on November 27, 2013 the overall change result was discussed. In the nearly three years that passed since the researcher was observing the change process a lot was changed. Some clear results that directly were a result of the change process was the awareness among the service engineers regarding the financial impact of their decisions on the overall maintenance cost for repair and renewal. In the past three years the maintenance cost for housing decreased significantly (rough estimates of 25% are given). Also recurring meetings (named the ABCD platform) between the service engineers working in the nine districts improved the horizontal communication and enables the exchange of ideas, information, and best practices.

Additionally many other change projects were started which also supported the required change in behavior of the service engineers. A major change was the implementation of Enterprise Resource Planning (ERP) software (SAP), which made three other applications obsolete. This system also made it possible to start working with a price book, which lists the actual prices for repair and renewal used by the external contractors. The service engineers could make their order for repair and renewal directly in the system making a purchase order for the contractor at the same time. Furthermore, there has been a lot of attention for the maintenance cost just by creating insight and awareness in the organization.

Another positive outcome of the change process was the increased cooperation between the nine districts and the five teams working for the Housing and Building Services (the internal contractor). Today, the five teams are dedicated linked with one or more districts. This direct link improved the cooperation between service engineers, district coordinators and the employees of the Housing and Building Services. Meetings were planned regularly to discuss repair orders and to make or adjust long term maintenance plans for the houses and the neighborhood.

In general the service engineers act on a more strategic level, which was the goal of the change process three years ago. They are now involved in making the strategic plans regarding neighborhood development, long term maintenance for the housing, and including calculation of the monthly rents. Nevertheless, they still need their technical skills for making repair and renewal orders. As a side effect, the turnover of personnel has decreased and the organization is stable at this moment in time, which also made it possible to learn and develop with a group of dedicated employees.

Finally, in this session the change context was discussed. All participants agreed upon the idea of an interacttional learning and an emergent change process. The activities that followed and changes realized were not deliberately managed or planned upfront. The manager Housing stated that *"it is one of our values now to be connected, but nobody is actually guiding or managing that process. We do not tell who has to connect with who, and when or what they should talk about. We only create a kind of 'fertile environment' in which employees should be encouraged to exchange information which seems important to them. That is also described in our new vision, but that is all."*

The team manager Housing and Building Services agreed on this. He confirmed that service engineers, district coordinators and employees within his department are more 'connected'. When the change process started the Districts and the Services departments seemed to be two different worlds within one organization. Today all know that they have to work together and this has not been a managed (change) process. Instead, it was based on the increasing awareness among the employees that everything they do counts. This can be seen as a continuous sensitivity of all organizational members to local contingencies, real-time experimentation, learning, sensemaking, exploitation of existing tacit knowledge, and feedback loops from results to actions as described in Chapter 2 and mentioned by Weick in Beer and Nohria (2000).

Overall the conclusion is that the change process has been successful, although different other change initiatives as well were beneficial for the change outcome. Also here a self-serving bias was possible, but it would be strange if all four participants, working in different positions and roles in the organization did not overtly discuss their opinions. This way of working does not fit within the organization culture and during the sessions the impressions was that all participants were very open and honest in their reflection. The District coordinator even mentioned that *"it was good to have this reflection because he sometimes thought that the organization did not make enough progress. Now, by looking back I really see what we all have achieved in these past three years."*

This case study has several limitations. The quotes used only reflect a part of all the discussions that were held in the conversation sessions and what was observed by the participant researcher. Nevertheless, the patterns in the observed conversation were clearly recognizable in the five interactive sessions and they can be considered as characteristic for the interaction that takes place between the professional groups, hence indicating their different professional discourses and cultures. The discourse analysis was based on the transcripts from only one informal session with a group of employees and the selection of utterances in the discourse analysis is subjective, although it does represent the crucial interactions of the informal meeting, thus reflecting the overall gist of the discussion.

Chapter 8
A cross case analysis of professional discourse and culture interaction

This chapter[30] compares the results of the three cases described in the previous chapters, and illustrates the importance of professional discourse and culture interaction across the cases. This cross case analysis has two main purposes; (1) to broaden understanding and (2) render an explanation (Miles and Huberman, 1994; Glaser and Strauss, 1970). It compares the three case studies, and it tries to gain additional insights to what extent the organizational change has been affected by the interaction of engineers, managers and consultants with different professional discourses and cultures (see Chapter 1 for the main research question). Section 8.1 starts by presenting an overview of the methods used and it briefly highlights the position of the researcher as a participant observer in the three cases (see also Chapter 4). Section 8.2 describes the 'method of measuring' (see Chapter 2) the organizational change result, which has been based on three criteria: (1) time, (2) budget, and (3) performance (Meredith and Mantel, 2006) in order to find a possible relation between the aspects of influence (i.e., organization context, change context, intentional context, professional discourse and culture) by using Ulijn and Weggeman's framework (2001).

The DA framework suggest that an effective change program should first begin with social innovation, and then it should be followed by technical innovation when implementing a technical innovation (i.e., a Tablet PC or a new MRO system). Section 8.3 describes the context analysis of the three cases, starting by presenting the data that was gathered and comparing the three cases while making a description of (1) the organization and change context, (2) the lexical analysis and (3) the syntactic analysis. The whole corpus that has been analyzed consists of 96,016 written words and the 101,207 (oral) discourse words. Altogether, 112 people were interviewed during 68 interview sessions. Most of the interviews that were recorded provided more than 25 hours of text. A speech act analysis has been performed on 122 utterances (4,429 words) and attributed to 13 different syntactic measurement points. Section 8.4 repeats the different results obtained from the discourse analysis (see Chapters 5, 6 and 7) across the cases, and answers the main research question and the related sub questions. Section 8.5 characterizes the professional culture and discourse across the three cases combining this with the organizational context and change context while at the same time explaining the overall change result per case. Finally, Section 8.6 summarizes this chapter.

8.1 This study and the three cases

The main research question (see Chapter 1) of this study is: *what is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?* The following six subquestions which might ensue from this are as follows:

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30 Parts of this chapter has been based on Pieterse, J.H., Ulijn, J.M., and Verhoeff, A., (forthcoming in 2014). Understanding the relation between Professional culture and Organizational change: A discourse study into the effectiveness of service engineers in three Dutch organisations. *Journal of Technological Forecasting and Social Change (provisionally accepted).*

1) *What is the organizational and change context of the three cases?*
2) *What is the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants?*
3) *Can a difference between Professional Culture (PC) and Professional Discourse (PD) of different professional groups be a cause of resistance to change?*
4) *Do cultural context factors, such as the interaction between Organizational Culture (OC) and Professional Culture (PC) affect organization change?*
5) *Can Discourse Analysis (DA) be useful to understand the organization change result?*
6) *Can DA lead to additional insights concerning the interaction between OC and PC as to benefit technical and social innovation (TI and SI)?*

As described in Chapters 2 and 3, the present studies on discourse (studied in linguistics) pay little attention to professional discourse and language use in change management. In the literature on change management hardly any attention is paid to the effect of the differences found in professional discourse. One might then wonder how this could possibly affect the change process. Communication, in general, is always a focal point in change management, but it usually concerns 'how the change message should be communicated' using the sender - reciever model. Instead, participants in change should focus on the interaction, the sensemaking and the professional discourses used. This study conjectures that the impact of the communication and the professional discourse and culture of the people involved in change projects does have a substantial influence on the change result. That is why an attempt has been made to gain more insight into how this supposed gap in the literature can be bridged.

The explorative nature of this study allowed the conceptual framework of this study (see Figure 2.1 for the initial version) as depicted in Figure 8.1, to develop gradually and to show subsequently the possible relations between organizational change success towards socio-technical innovation, professional discourse, professional and organizational culture.
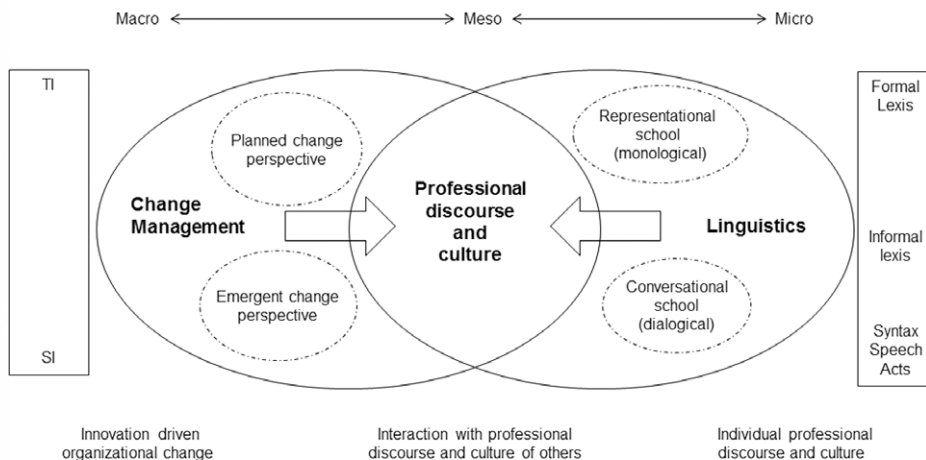
Figure 8.1 Explorative conceptual framework with possible relations between organizational change success toward socio-technical innovation, professional discourse, professional and organizational culture.

The combination of two different disciplines, such as organization science and linguistics and the comparison made of the three cases in this study require at least a multilevel approach as suggested in Figure 8.1. The levels discerned are the macro level of the organization as a whole to the micro level of the discourse analysis of verbal behaviour of individuals, and at the meso level as a sort of interface between the organization, their employees and external consultants through their respective cultures. Hence, assessing organization change success needs a macro analysis. The Discourse Analysis (DA) of written documents (lexical) and oral encounters (syntactic), in which the organization meets its service engineers, managers, and consultants is situated at the micro level. The cultural values of the professions (PC), such as the crucial service engineer, may be interpreted on a meso level between the two extremes. As a result, the cross case comparison resembles quite that of a multilevel nature. The different methods (e.g., desk research, interviews, discourse analysis and participant observation) used to study the three Dutch organizations can be seen as triangulation. The two linguistic levels, that of lexis and syntax in the discourse analysis can be considered as separate angles. Do the participants in change 'practice what they preach' so to speak in the discourse used by the managers and the consultants, for instance who interact with the service engineers?

To answer the main research question three different cases were studied using multiple methods, such as: desk research, semi structured interviews, word count on formal documents and discourse analysis. Thereby combining a theoretically planned/emergent change perspective with a pragmatic linguistic framework (i.e., speech acts, negotiation strategy, communicative support, and conversation phases). This multi method approach is hardly used in the change management literature we are familiar with. In the linguistic literature, these methods are used separately, but rarely in combination with organization change management. This multi method approach combines different perspectives (i.e., angles) on the three case organizations by providing a rich picture of what is going on according to the stakeholders. The sensemaking processes of the people involved in change projects could be studied as social interaction processes of different professional groups with different profesional discourses and cultures.

Desk research and interviews generated information about the formal organization as written in formal strategic and project documentation. The interview results gave a diverse perspective of the organization, change and intentional context. The results of these methods were discussed with the managers and sometimes with a group of employees in order to determine the next phases to be taken in the change process. This is typically the case when performing action research as the researcher participated in the change process. Note that there is a possible researcher bias because it is impossible to observe a change process without being involved or influencing.

The discourse analysis (i.e., word count) regarding formal documents and the qualitative coding of utterances (i.e., speech acts, negotiation strategy, communicative support and conversation phases) represent one of the most important methods used in this study. The coding of the qualitative data was performed with a variable group of 6 – 10 coders, followed by a calculation for the highest percentage per utterances, which then became the label for that specific utterance (see Appendices), which is an alternative way for calculating the inter-coder reliability when more than two coders are involved in the coding.

The results clearly show a difference in the typical professional discourses and cultures of service engineers, managers and consultants, and it may be concluded that the assumptions involved, when they were not made explicit, can hamper the interaction between these professionals, and as a result they affected the change process negatively.

The methods used are based on a small amount of data points, interventions (i.e., conversation and training sessions, formal, informal meetings, and workshops) and utterances. From a participant observer perspective we can say that the whole corpus of written and oral discourse reflect the overall gist of the conversations in the organization at that moment in time.

8.2 Method for measuring organizational change results

As briefly described in Chapter 2 the judgment on change results are highly dependable on the interpretation of the stakeholders asked. A manager or responsible project manager might give complete different answers about the change result compared to an employee who is often the recipient of the change process. The measurement of the change result is also based on retrospective conversations with different key players involved during the change process in each case (see Chapters 5, 6 and 7).

Measuring organizational change often involves a combination of objective and rather subjective aspects concerning the change result. Traditionally, managers are eager to define change objectives in hard and measurable figures (often a budget or time), but the more covert elements are subjective. Einstein's quote; *'not everything that counts can be counted, and not everything that can be counted counts'* represents clearly the difficulties when measuring change results objectively. In this study the measurement of organizational change/success is based on three criteria often used in IT related change projects (Meredith and Mantel, 2006). The three criteria also described in Chapter 2, are; 1) time, 2) budget, and 3) performance. Time refers to deadlines, milestones and schedules that have to be attained. Budget refers to the project cost (and benefits), and is often limited to a project. Performance relates to the amount of necessary resources and required investments (i.e., man-hours and materials) needed to establish the required change result. Table 8.1 shows the overall organization change result as negative, neutral or positive respectively for the Cases 1, 2 and 3 (the results are explained in Table 8.4).

Within this study it is acknowledged that the three criteria are often used in a strictly planned change approach and are considered less useful when seen from a theoretical emergent change perspective. Nevertheless, the planned change perspective is still often leading in organization change as can be seen in the Cases 1 and 2 were these criteria fit very well. In the first two cases, the change process was IT related (Case 1: implementation of a Tablet PC and Case 2: implementation of a MRO system) and it can be seen as a technical innovation (TI).

The first case was about the implementation of the Tablet PC, which actually changed work processes and work content (i.e., technical innovation), requiring the service engineers to take a central role in the maintenance and repair process, become more customer oriented, and as a consequence also changed the work context. The change process in Case 1 can be seen as being

primarily technically innovative, followed by social innovation because the work context (i.e., social relations with colleagues and customers) for these service engineers also changed.

The second case showed a similar change process in which the implementation of MRO software (i.e., technical innovation) was the main goal, but in this case the change in the work context and content was not that considerable for the aircraft maintenance engineers. They had been used to working with similar versions of MRO systems (e.g., another look and feel of the user interface), but the new version required a stricter way of working within the aircraft maintenance process due to the checks that had been built into the software system. This had some impact on the work context and can be seen as social innovation, but not that much as seen in Case 1.

The third case was primarily a behavioral change process for the service engineers (Case 3: implementing a strategic vision for service engineers to become more customer oriented) and can be seen above all as service (social) innovation in which direct customer contact became the goal of the change process. This change particularly required that a change take place of the work of the service engineers because they had to develop different relationships with the tenants, being a customer who drives decisions and the service engineer had to fit the customers' demands into the technical and organizational possibilities of his employer. In Case 3 the connected network structure might have ensured that social innovation was automatically taken into account to serve as a kind of glue so as to enable the change process. Table 8.1 illustrates an assessment of the three cases and how the change goals, the approach, the result, and the type of innovation are related. The evaluation of the final change result was based on a discussion with stakeholders involved in the change process during the research and working for the case organizations.

Table 8.1 Overall assessment of the change process of three cases

Case	Change goal	TI/SI	Change approach	Change result
1	Tablet PC	TI+SI	Planned (top down)	Negative
2	MRO system	TI	Planned (together)	Neutral
3	Customer behavior	SI	Emergent (together)	Positive

Chapter 2 dealt with the importance of professional culture in order to understand the interaction dynamics between different professionals. Hofstede (2001) states that the professional culture is often developed when people receive their professional education and learn their occupational profession. This is also the period in which the professionalism is developed by a socialization process within the professional group (see Chapter 3) based on industry, occupation and social class. As described in Chapters 5, 6 and 7, the cases could be plotted on the framework developed by Ulijn and Weggeman (2001), representing the organizational culture, using the Uncertainty Avoidance Index (UAI) and the Power Distance Index (PDI) which are two of the dimensions from Hofstede, but also used in the work of Buelens and Devos (in Boonstra, 2004). Within this framework, the dimensions of Hofstede, which are mostly used for National Cultures (NC), have been specifically used to determine the different Organizational Cultures (OC) (see also Chapter 2 and Figure 3.5). According to Ulijn and Weggeman (2001), the optimal OC for both technical and social innovation can be found in between the two upper quadrants representing an egalitarian organization with both a task- and person oriented culture in which the UAI and PDI scores are low (see the dotted

line circle). Across the three cases a vector shows the low (negative) and high (positive) result of the organizational change based on the three criteria, time, budget and performance. Figure 8.2 positions all three cases within the organizational context including cultural aspects and a perspective on innovation (see also the similar figures in Chapters 5, 6 and 7). These results are confirmed during the conversations with different key players three years (December 2013) after the researcher left the organizations (see Chapters 5, 6 and 7).

High Change Result

Social innovation — Egalitarian — Technical innovation

Case 3

Connected — Guided missile

Case 2

Family — Eiffel tower

Case 1

Organic — Mechanistic — Low Change Result

Hierarchical

Low — UAI (Uncertainty Avoidance Index) — High

PDI (Power Distance Index) — Low / High

Person-oriented — Task-oriented
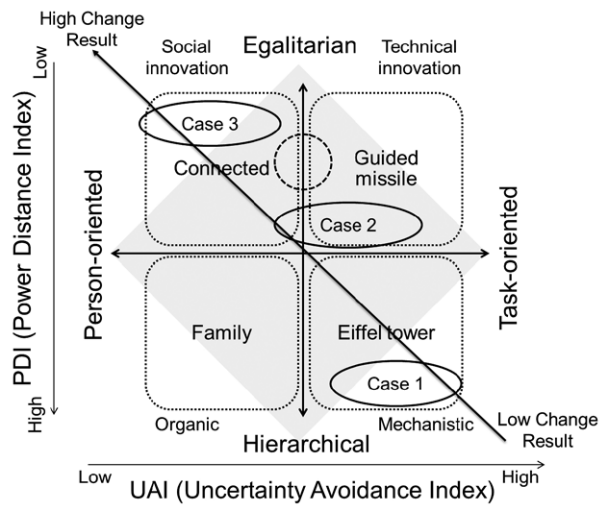
Figure 8.2 Three cases with a perspective on innovation within the organizational context (adapted from Ulijn and Weggemen, 2001)

Figure 8.2 shows that Case 1 (technical innovation followed by social innovation) can be related to a hierarchical and task-oriented organization (i.e., the machine bureaucracy, Eiffel Tower or mechanistic organization) with high UAI and high PDI estimated scores when applying Hofstede's dimensions. Case 3 represents the opposite (primarily social innovation) relating to an egalitarian and person oriented organization (i.e., connected island culture) with low scores on the UAI and PDI subsequently representing creative thinking within a minimum of prescribed procedures. Case 2 takes an in between position and starts with technical innovation followed by some, but very little social innovation compared too Case 1. It seems that the main focus on technical innovation in Cases 1 and 2 within the hierarchical and task oriented organizational context, when using a planned change approach, resulted in a less positive change result. The existing discourse differences between the professional groups studied in Cases 1 and 2 seem to have been amplified due to these contextual factors. In Case 3 the professional discourse differences also exist, but these are found within an egalitarian and person oriented organizational context, a change approach in which dialogical conversations are explicitly scheduled, as interventions seem to diminish the professionals' differences resulting in a positive change result. Based on the limited sample size of three case studies a tentative conclusion could be that the most optimal change program should first start with social innovation, and then be followed by technical innovation (see also Verhoeff, 2011) or at least the change process should pay attention to social innovation when implementing a technical innovation.

8.3 Context analysis across the three cases

Table 8.2 below shows the data gathered during this study, and match is made with the type of analyses that was done (see also Chapter 4). The available data was used for the discourse analysis. Also for describing the change process and to understand the overall organization, change and intentional context finally verifying the change results of the three cases. The linguistic analyses based on utterances and quotes used in Chapters 5, 6 and 7 can be used to verify the 'measurement' of successful change. Table 8.2 shows that Case 1 generated more formal project documents (37) regarding the change project as compared to the other two cases, which seems to fit with the machine bureaucracy or Eiffel Tower metaphors and the hierarchical, task oriented way of working. The actual number of interventions was limited, which might indicate the formal way of working during the change process.

Case 3 shows the opposite, as only five progress documents were produced to evaluate the conversation sessions and the absence of formal project documents which seem to fit within a professional bureaucracy or the connected island metaphor in which an egalitarian and person oriented way of working is quite common. Case 2 takes an in between situation as compared to Cases 1 and 3, thus showing a mix of a person and task orientation together with an egalitarian, and slightly hierarchical way of working, hence representing an adhocracy or the (loosely) guided missile metaphor.

Figure 8.2 indicates that the use of project documents does not guarantee successful change (Case 1), and it even appears to strengthen the mechanistic, hierarchical and task oriented culture of the organization in neglecting the need for conversations that can bridge the discourse differences of professionals. Case 3 shows the opposite with a few formal documents, but it pays more attention to the interactions and sensemaking processes in the organization.

Table 8.2 Overview of documents and methods of analyzing the data per case

Documents	Case 1 Home utilities	Case 2 Aircraft maintenance	Case 3 Housing association	Method of analysis
1) organization				
Annual reports	2	1	2	Desk research/word
Promotion materials (org)	1 (dvd)			Desk research
Sub total	**3** *(4.5%)*	**1** *(2%)*	**2** *(7%)*	
2) change project				
Project plans	1	1	-	Word count
Milestone documents	-	2	-	Desk research
Progress/evaluation reports	10	1	5	idem
Action & decisions	21	-	-	idem
Steering committee	1	-	-	idem
Newsletters	2	2	1	idem
Project e-mails	1	-	-	idem
Promotion material project	1 (dvd)	-	-	idem
Sub total	**37** *(59%)*	**6** *(13%)*	**6** *(20%)*	
3) interventions				
Regional kick off meeting	1	-	-	Discourse analysis
Impact analysis meeting	-	1	-	Participant observation
Diagnostic workshop	-	1	-	Discourse analysis
Training modules	-	7	-	Participant observation
Conversations sessions	-	-	5	idem
Feedback presentations	2	1	2	idem
Sub total	**3** *(4.5 %)*	**10** *(22%)*	**7** *(23%)*	
4) interviews (formal)				
Managers	9[31]	6	3	Interview notes
Service engineers	8	19	6	idem
Project managers	1	3	-	idem
Others	2	-	2	idem
5) interviews (informal)				
Group interview	-	1	4[32]	Discourse analysis
Sub total	**20** *(32%)*	**29** *(63%)*	**15** *(50%)*	
Total documents	**63** *(100%)*	**46** *(100%)*	**30** *(100%)*	

31 In 2 interviews a (team) manager and service engineer were interviewed together.
32 Of these 4 group interviews transcripts were made based on digital recordings.

180   Service Engineers in Change: Count your words • Jos Pieterse

For the cross case analysis a meta-matrix is used that presents the relevant descriptive data from each case in a standard form (Miles and Huberman, 1994:178). The matrix first specifies different topics that relate to the organization, change and intentional context. Second, elements are described that relate to the professional discourse (both oral and written) of the service engineers, managers and consultants. These different elements were also addressed separately in the previous case chapters, but now the cross case analysis can possibly answer 'why', 'what', and 'when' questions giving insights into reasons for how professional discourse, among others, influenced the change processes and the final change result in these case organizations.

The indicators used to describe the three contexts give a better understanding of the typical organizational context. First, the organizational context shows such indicators as sector, organization type, structure, and the number of employees involved in the change process as being important aspects for obtaining a general picture about the organizational context. Second, the change context shows indicators as being the focus of the change (e.g., what should the change project deliver), type of change (e.g., what is the guiding coalition that starts the change process), the change approach (e.g., planned or interactional learning), the project team (e.g., is there a dedicated project team in place for the change project), roles in the project team (e.g., roles and functions of participants in the project team), and the change result (e.g., within time, budget and resources). Third, the intentional context describes only briefly two indicators because this is at an individual (psychological) level and in fact beyond the scope of this study, but this information show the expressions of service engineers about their own beliefs and assumptions when addressing their professional cultures.

Table 8.3 a, b and c below illustrates the organizational, change and intentional context across the three cases and the indicators. Additionally, the researcher gave the indicators an indicative sign (i.e., positive, neutral or negative) to create a quick overview of the contextual factors that are assumed influencing the change process and the final change result. A positive (+) sign indicates that it contributed to successful change, whereas a negative (-) sign indicated that it contributed to a failure in the change process. These signs can be used to understand the influences of the indicators on the change result which can be verified later using the linguistic analysis and cultural interpretations of the three cases.

As described earlier in Chapter 2 the emergent change perspective acknowledges that changes start local (i.e., individual or team level) within small groups, and finally end up global (i.e., organizational level) and might be a preferable way for realizing change success. The positive signs (+) are given with this assumption in mind.

Table 8.3 (a) Contextual factors for the case organizations

Organization context			
Indicators	Case 1	Case 2	Case 3
Sector	Home utilities	Aircraft maintenance	Housing
Organization type	Machine bureaucracy (-)	Adhocracy (+)	Professional bureaucracy (+)
Location	Decentralized (-)	Centralized (+)	Centralized (+)
No. of Employees involved in change	650 (-)	220 (±)	40 (+)

Table 8.3 (b) Contextual factors for the case organization (continued)

Change context			
Indicators	Case 1	Case 2	Case 3
Focus of change	Tablet PC, processes and behavior	MRO System and work processes	Change in behavior
Type of change	Top down directed rational program (-)	Rational planned, top down/bottom up (±)	Organic based on a strategic vision (+)
Change approach	Planned change (-)	Planned change (-)	Emergent change (+)
Change driver	Technical innovation (-)	Technical Innovation (-)	Social Innovation (±)
Project team	Dedicated project team in place (±)	Dedicated project team with business involvement (+)	Line organization responsible (+)
Roles in project team	Primary staff and sound board of service engineers (-)	Key users / business (service engineers) and IT staff (+)	Service engineers, coordinators and line management (+)
Change result (based on the three criteria of time, budget and performance)	Out of time, budget and resources. Tablet PC not successfully implemented (-)	Within time and budget, but limited functionality. MRO partly successful (±)	No time, budget and resource restrictions upfront. Gradually shift in conversations and behavior. (+)

Table 8.3 (c) Contextual factors for the case organization (continued)

Intentional context			
Indicators	Case 1	Case2	Case 3
Common beliefs about work	Procedure driven and (work) safety (-)	Technology driven, aircraft safety and punctuality (+)	Socially and technology driven. Responsibility (+)
Own assumptions about a service engineers' identity	Loyal, service oriented, "see it to believe" (indicating lack of trust), introvert (-)	Problem solver, "a doer" and less "a thinker", proud of organization and product (±)	"Live and let live", open and direct, being creative (+)

The contextual factors and the indicators mentioned in Table 8.3 a, b and c are based on the results of the semi structured interviews, participant observations, formal documents of the organization and informal conversations during the research project. When looking at the signs given for the cases it can be concluded that Case 1 scores for the most part negatively (10 times negative out of

12 items in total) on all three contexts. Case 2 scores more positive (5 times positive out of 12) items when compared to Case 1, and Case 3, which shows the most positive scores (10 times positive out of 12 items) of all three cases.

How do contextual factors affect organizational change?
It can be concluded that organizational change in a (see Case 1) hierarchical and decentralized organization with change objects (i.e., end users) hardly involved from the start of the change project, using a top down planned change approach with primarily staff employees involved, focusing on technical innovation can be seen as possible influential aspects for unsuccessful change. This even does not including the interaction dynamics between the different professionals and their discourse differences. The effect of these contextual factors is that they are making the change process more complicated and hamper the interaction dynamics. On the contrary, organizational change seems to be successful in a (see Case 3) centralized (i.e., location) organization with change objects in the lead, facilitated by line management, using an emergent change approach, focusing on social innovation, co-creating in interaction the best possible change outcomes at that time. Case 2 shows an 'in between' situation in a centralized organization, with end users being responsible at the very start of the change project, although they used a planned change approach and a project team with clear deadlines and deliverables focusing on technical innovation. In general the success or failure of the change can be explained by the possibility that different professionals have to interact and to make sense together of the change process that is taking place. Contextual factors easily affect the real interaction processes, which then are often 'regulated' by strict project plans, vision documents, abstract procedures and plans regarding how to communicate with the change objects by the change agents, but these can hardly replace real face-to-face sensemaking.

In conclusion, there are considerable differences across the three cases such as organizational structure, the number of employees involved, the type of change and the driver for change, which also influenced the change process apart from the professional discourse differences between the three groups investigated. Case 1 is a machine bureaucracy (Mintzberg, 1983) with many procedures and technical guidelines, a regional and departmental decentralized organization with a top down rational change project according to a planned change approach. The project members are mostly staff and are not actually working in the teams that are confronted with the implementation of the tablet PC. They are representatives of headquarters who do not belong to the engineering community, thereby creating both a physical and mental distance with the actual targets of change. These contextual factors might be a cause for change failure.

Case 2 is a smaller part of an airline organization, and can be characterized as an adhocracy (Mintzberg, 1983). The employees are centralized in one location with different offices which are located close to the hangar. The change project follows a planned change approach but from the very beginning service engineers (i.e., the business) were highly involved, and developing together the best way to implement the MRO system in their organization. Moreover, this case illustrates that all of the employees from top (i.e., management) to bottom (i.e., shop floor) have an educational background in aircraft engineering, so their professional culture and discourse might be more in line, hence not causing too many complications in the interaction. These contextual factors might be a good cause for successful change.

Case 3 is localized in one building with different departments representing the city districts allowing professional cultures to cooperate, and can be characterized as a professional bureaucracy (Mintzberg, 1989). This is the only case that uses a change approach which focused on interactional learning of the participants together without a dedicated project team. Line management was responsible for the change process and the main focus was on having open conversations in which ideas and best practices are shared and new, unforeseen ideas could emerge. The responsible management facilitates, participates and initiates gatherings in order to make the open conversations possible. The required behavioral change cannot be planned within a strict timetable with deadlines nor are there any project plans that need to be adhered. The number of employees involved is small compared to Cases 1 and 2, but they are all actively involved in the sensemaking process and there seemed to be a working climate of trust here. This setting might be a good indicator for successful change.

When looking at the change result, Case 1 shows an unsuccessful change result based on time, budget and performance indicating the relative failure of the change process. This is confirmed by the contextual aspects as described in Table 8.3. Case 3 shows the opposite of Case 1 and can be seen as a successful change having more positive scores. Table 8.4 gives an overview of the 'measurement' of change success or failure based on three criteria; time, budget and performance (i.e., resources such as materials and staff) (Meredith and Mantel, 2006: 650). Additionally this is confirmed during an evaluation with stakeholders from the three cases three years later.

Furthermore, the impact of the change can also be considered as a relevant aspect in determining the change result. In Case 1 the impact of the change was big (e.g., 650 service engineers and a new ICT tool), while in Case 3 the impact was more a personal/behavioral transition of 40 service engineers. Case 2 involved 220 employees, but the MRO system was quite similar to the older MRO application.

Table 8.4 Overview of the measurement of change success or failure

Pillar	Case 1	Case 2	Case 3
1. Time (TI)	Not within time (at least one year delay)	Within time delivery of the MRO system, but with limited system functionality	No strict time schedule, but part of daily work
2. Budget (TI)	Not within budget (both cost and expected revenues not realized)	Within budget	No strict budget
3. Performance (TI and SI) Employees and materials	Not within the planned resources (man hours and materials)	Within planned man hours and materials (but additional work had to be done)	Resources within normal standing organization
Conclusion	Unsuccessful (-)	Successful (limited, ±)	Successful (+)

The overall conclusion confirms the tentative assumptions regarding the change results as described in Table 8.1. Case 3 can be considered as an a-typical case having no time, budget and resources planned in advance for the change process, but instead incorporating it into the daily business as part of the work. Nevertheless, we consider this case comparable with the other cases because in all three cases a change program was going on in which different professionals, including service engineers, had to interact and the differences in discourses is similar.

The exact measurement of the change result per case organization was not an explicit part of this study. However, we have evaluated the final change result together with the different stakeholders participating in the change process as described in the Chapters 5, 6 and 7. For all three cases it has been noticed that the contextual factors are also influencing aspects in change processes. This study took into account that, apart from contextual factors, also different discourses of professionals in interaction might affect the change results. The next section illustrates the discourse analysis across the three cases trying to show how important discourse differences can be for interaction and change dynamics.

8.4 Discourse analysis across the three cases

Apart from the contextual factors described above, this study has focused on the different discourse styles of professionals who interact within the organization and how this might possibly affect the change process. During this study different meetings and conversations were attended and observed by the researcher. We describe each meeting using indicators that are useful to understand the conversational setting. The regional kick off meeting in Case 1 illustrates a meeting in which the internal change consultants presented the new work processes for the service engineers by highlighting the use of the Tablet PC which was tested by several of the service engineers and by indicating the regional roll out planning. The agenda of the meeting was made by the internal consultants in cooperation with the regional management. The team managers and service engineers were invited, but they were not familiar with the agenda. This setting clearly represents the mechanistic and hierarchical organizational culture.

In Case 2 a diagnostic workshop was scheduled by an external consultant with the three members of the management team of the Technical Department and the two project leaders from the change project. This meeting was organized by the external consultant, and it focused on sharing responsibilities regarding the change project (i.e., implementing the MRO system).

In Case 3 the setting was an informal meeting with one manager en two service engineers who were evaluating the conversation sessions and trying to make sense of the insights they had gained during these sessions. Table 8.5 shows Case 1, 2 and 3 by using the different different indicators as described in Chapter 3 (see Figure 3.2), suggesting that the communication changes from formal/ closed to informal/open, which seems to fit with the organization typology as described earlier in the Chapters 5, 6 and 7. These three meetings are indicative and representative for other conversations in the different cases.

Table 8.5 Overview of the cross case conversational setting

Indicators	Case 1 Home utilities	Case 2 Aircraft maintenance	Case 3 Housing association
Setting (where)	Regional kick off meeting	Diagnostic workshop	Evaluation meeting
Participants (who)	(Team) managers, service engineers, and consultants	Managers, project managers, and consultants	Manager and service engineers
Topic (what)	Discussing regional implementation, new processes and the Tablet PC	Discussing how to share responsibilities related to the project	Evaluating the change process and conversation sessions
Message (what)	Consultants inform regional management and service engineers	Participants share and understand the possible pitfalls in the change project	Participants make sense of the change process and conversation sessions
Channel (how)	Face-to-face	Face-to-face	Face-to-face
Contact (relation)	Formal	Formal	Informal
Code (convention)	Internal consultants are in the lead	External consultant facilitates	Open dialogue is used to understand
Objective	Informing	Understanding	Evaluate and learning

Table 8.5 shows that all of the conversations were face-to-face discussions regarding the change process. In Cases 1 and 2 these discussions consisted of formal organized meetings with upfront agendas determined by the consultants. In Case 1 the setting created a formal and closed way of communicating in which the service engineers were constantly asking detailed questions, but they received rather abstract replies from the internal consultants because they did not know enough details of the service engineers' work. The conversation in Case 2 was meant to serve as an open discussion among the participants in order to understand how the managers could share their responsibilities in the change project facilitated by an external consultant. In Case 3 there was no formal agenda, and the conversation was informal (i.e., a talkative gathering) in which sensemaking and creating mutual understanding regarding the change process among participants was the main goal. The open dialogues changed the conversations between employees in the organizations (see also Shaw, 2007) providing space and understanding for each other's perception.

In Case 3 the Manager Housing noticed that service engineers made other decisions in their work, i.e., more financial consideration and customer interest. They also started asking other questions related to long term maintenance plans for the houses. Before the start of the change process these topics were not on the service engineers' mind. This might indicate that there was indeed a mental shift of the service engineers from a technical orientation towards a more customer orientation, which was the goal of the strategic vision of the Housing Association.

It can be seen that the contextual aspects affect the change process, and also does the setting of a formal or informal meeting. In addition we performed discourse analysis on formal written documents (i.e., word count). Therefore the following section describes the cross case lexical discourse analysis on formal (project) documents using the word count method.

8.4.1 Lexical discourse analysis on written documents

Studying the three cases we began with a lexical discourse analysis (i.e., word count) on formal written (project) documents related to the change process by using *WordSmith* software. By doing this, it was possible to investigate what the focus was of the formal (professional) discourse of the authors who wrote the (project) documents. In Cases 1 and 2 these authors represent the change project team and management, while in Case 3 the documents mainly represent the management. The formal documents in Cases 1 and 2 represent the project documentation which was written at the start, during, and for the purpose of evaluating the change process within the organization. The formal documents of Case 3 represent strategic documentation which was written in order to develop a long term vision in the organization. Table 8.6 gives the total number of words (96,016) found in this corpus in the formal documents (not including the transcripts of interviews).

Table 8.6 Total word count in the written corpus of formal documents

Case 1 Home utilities			Case 2 Aircraft maintenance			Case 3 Housing association		
Document	# word	%	Document	# word	%	Document	# word	%
PID	6,613	54,7	PID	9,719	29,6	Annual report	20,744	40,6
FOS news	802	6,6	Script UAT	14,315	43,5	Quality service	17,512	34,3
UAT	2,772	22,9	End of Project	4,125	12,6	Strategic vision	12,813	25,1
User Group report	1,894	15,7	Newsletter	1,200	3,7			
			Functional analysis	3,507	10,6			
Total word count (written)	12,081		Total	32,866		Total	51,069	

The above corpus which consists of the words were counted in the formal written (project) documents, and which of course differ per case. For this study the documents available at the time were used representing the written and formal change project related discourse.

In the Chapters 5, 6 and 7 the detailed word counts were performed on all of the documents, but Table 8.7 shows the word frequencies that were actually counted in the formal change project initiation documents (PID) (for Cases 1 and 2). In Case 3 the strategic vision document was analyzed

because in this case there was no formal change project with related project documentation. However, the strategic vision document can be seen as the document that initiated the change process. The three documents in Table 8.7 have been written by the members of the change project team (Cases 1 and 2) and managers (Case 3), but they all worked on the management level in their organizations. These documents represent the formal written discourse of the change programs for each case by addressing topics such as the specific change goals, change direction, and project organization. If these documents are considered as a roadmap to the deeds of the organizational change, the crucial three strategic documents can act as a calibration point for the IST situation and they can anticipate the SOLL situation.

Table 8.7 Lexical frequencies[33] of three crucial formal project documents, one per case

Case 1 Home utilities		Case 2 Aircraft maintenance		Case 3 Housing association	
Project Initiation Document (Total of 6,613 words)		Project Initiation Document (Total of 9,719 words)		Strategic Vision Document (Total of 12,813 words)	
Word	**Freq**	**Word**	**Freq**	**Word**	**Freq**
Project	106	Project	222	Customer	96
Products	47	Board	72	Customers	48
Steering group	32	MRO (TRAX)	62	Employees	43
IT control	30	Business	44	Neighborhood	38
Work Order Management	25	Technical	39	Organization	38
IT application	23	Product	36	Inhabit	37
Cost	20	Phase	35	Societal	36
Profit	19	Plan	28	Performance	30
Roll-out	19	Implementation	27	Scenarios	25
Communication	14	Processes	23	Information	23
Service engineer	12	Risk	21	Real estate market	23
Subtotal: 11 words		**Subtotal: 11 words**		**Subtotal: 11 words**	

In these documents the typical words used can be related to the overt, 'top of the iceberg' metaphor (see also Schein, 1997) (e.g., *process*, *structure*, *technology*, *systems*, *products*, *goals*, *deliverables*). In Case 1 the word *project* was counted 106 times whereas the word *service engineer* has a frequency of a mere 12 times. Case 2 shows a similar situation in which *project* has a frequency of 222 times and the word *service engineer* is even absent from this document. Case 3 shows a strong focus on the *customer/customers* with a frequency of 96/48 times, and thus seems to be in line with the organization's strategic vision. In this organization the *employee* (i.e., service

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33 In this table percentages are not used because the words represent a selected part of the total words.

engineer) has a frequency of 43 times. This might suggest that the writers of the strategic vision document in Case 3 realize that employees are important stakeholders in the change process.

In the first two cases, based on these documents, the focus on the employee is missing. This might indicate that in formal written language of Case 2 the real change object was far removed from the minds of the change project group and that the attention was geared towards the more objective and measurable factors in the organization (e.g., the overt, top of the iceberg kind of words). In written documents there is always a distance between the sender (i.e., the writers) and the receivers (i.e., the readers). This absence of direct contact, as in human conversations, might make the language in written documents more formal and explicit, but also more abstract.

It can be concluded that when covert, bottom of the iceberg words, are missing in the formal documents (i.e., coalitions, power relations and shared responsibilities, informal leadership, psychological needs, social codes, emotions, perceptions) the formal and abstract tone of the document increases. Using these formulations in documents might give readers the impression that it is possible to separate the manager who is writing the document and his role in managing the change, placing himself as an objective person outside the change process looking down and reigning from the top (Homan, 2005). However, these human reactions are crucial in change processes. During face-to-face conversations a mixture of formal and informal language is used, which represents the real sensemaking in the organization. When the distance between sender and receiver is small and possibilities are provided for direct interaction and feedback, as in the conversational model of communication in Chapter 3, the language use is often informal, to the point, and larded with practical examples of the participants, subsequently leading to spontaneous, but also more volatile reactions. Most change project teams believe in the formal project documents that they have written and they expect that employees will change their behavior or mindset accordingly. They neglect the human aspects that influence the change process, failing to take the employees' beliefs, perceptions, power relations, politics, and shared responsibilities which are prevalent in the organization seriously.

Tables 8.8 and 8.9 present the words that have been counted in each case and for each document based on the detailed overview in Appendix G. Table 8.8 gives the ordering of words from abstract project related (i.e., *project*, *plan*, *results*, *risks*) towards concrete employee or customer related (i.e., *end user*, *users*, *employees* and *customers*). For graphical reasons we have numbered the typical words as follows: (1) *Project*, (2) *Plan* (including the words i.e., planning), (3) *Results* (including words i.e., products and performance), (4) *Service engineer* (including words i.e., end users, user organization, colleague and employees), and (5) *Customers* (including words i.e., residents).
Table 8.8 list these category words (1 – 5) and the counted words that were included for each case. The category words are a clustering of the words mentioned in Table 8.7 above. The numbers represent the frequencies of the particular words, but for the cross case analysis we have clustered them as a category word. Table 8.9 gives a detailed overview of the words counted in each case and for each specific document by using the same categorization as mentioned in Table 8.8. For instance in Case 1 the word *'project'* (see Table 8.9) has been counted 106 times in the Project Initiation Document (PID) and 23 times in a User Acceptance Test (UAT) document, which equals the 129 times mentioned in Table 8.8.

Table 8.8 Categorized words counted per case

Category word	Case 1 Home utilities		Case 2 Aircraft maintenance		Case 3 Housing association		Totals
1. Project	Project	129	Project	280	Project	35	444
2. Plan	-	-	Plan	36	-	-	36
3. Results	Products	47	Products	36	Results	119	202
			Results	261	Performance	30	291
4. Service Engineer	Service Engineer	19	Colleague	107	Employees	43	169
			End user	14			14
	User	9	User	5			14
			organization	6			6
			Employees				
5. Customers	-	-	-	-	Residents	12	12
					Customers	458	458
Total	204		745		697		1.646

Table 8.9 Overview of the counted words per case and document (categorized)

Cases	Case 1 Home utilities (4 documents)				Case 2 Aircraft maintenance (5 documents)					Case 3 Housing association (3 documents)			Totals
Category words	Project Initiation	Newsletter FOS	Report UAT	User Group Report	Project Initiation	Test script report	End of Project	Newsletter	Functional impact	Annual report	Quality report	Strategic vision	
1.	106	-	23	-	222	-	53	5	-	35	-	-	444
2.	-	-	-	-	28	-	-	-	8	-	-	-	36
3.	47	-	-	-	36	252	9	-	-	21	98	30	493
4.	12	3	10	3	-	107	16	3	6	-	-	43	203
5.	-	-	-	-	-	-	-	-	-	12	389	69	470
Total	165	3	33	3	286	359	78	8	14	68	487	142	1,646

Category words number: 1. Project, 2. Plan, 3. Results, 4. Service engineer, 5. Customer

Table 8.8 presents first that in Case 1 and 2 the word '*project*' has been used 409 times (129 and 280 items) in total, whereas Case 3 only uses this word 35 times. This reflects the planned change approach in Cases 1 and 2, while Case 3 did not use a formal project team but started an interactive learning change approach without a change project team or even project documents. Second, the word '*plan*', very often related to '*project*', is only found in the project documentation of Case 2 (28 and 8 items), but it was also expected to be found in Case 1 because of the planned change approach and the hierarchical task oriented context. Third, Cases 2 and 3 used the word '*results*' in total 446 (493 minus 47 items) times in only five documents, which can be explained by the fact that Case 2 mentions in the written test script report the word '*result*' 252 times (51%). In this test script report a certain manual action in the MRO system led to a certain output (i.e., result) which was explicitly mentioned in the document in many of the column headings (i.e., '*expected results*' and '*actual results*'). When leaving the word count in Case 2 out of scope only in Case 3, the word '*result*' (including '*performance*') is mentioned 149 times (33%) subsequently indicating that this organization is result driven and clearly used to focusing on customer service. It might also be that in Case 3 employees were able to speak with each other using utterances that resulted in the performance and closure phases of an conversation which then indicates as well that employees want to move on to engage in future activities and to leave the past behind. Fourth, the word '*service engineer*' is mentioned 203 times in total, but with strong differentiations across the three cases (Case 1 = 28 times (13.8%); Case 2 = 132 times (65.0%); Case 3 = 43 times (21.2%)) indicating that in Case 1 the service engineers were ignored because of the many organizational layers of (project)managers which imposes as mostly non-technical a technical innovation on service engineers seeming to be the reversed world.

According to the word count, Case 2 shows that the service engineers were the most visible in the documents because here the service engineers were involved from the very start of the change project and a group of service engineers (i.e., super users) participated actively in the change project. This can also be compared with the different change approaches within the three cases as described in the chapters 4, 5 and 6. As an example Case 3 showed in the strategic vision document at least some (43/1646 = 2.6%) awareness that the change towards more customer service had to be done by the service engineers. Finally, this case shows that the word '*customer*' is used (470/1646 = 28,5%) many times representing the social change towards customer service or even an customer driven organization and the consequences for the behavioral change of the service engineers.

To conclude, these documents reflect the (project) management discourse because they were all written by employees on the management level and implicitly show the words that seem to be important in the particular change processes. Moreover, Cases 1 and 2 show that the words (i.e., project and plan) represent the more functional and technical (project)management approach, while in Case 3 the focus is on the change goal visible in the words '*service engineer*' and '*customer*.' Besides this written language in formal documents this study wanted to find out what differences might be found in the professional discourses of the three main professional groups involved in the change process: service engineers, managers and consultants.

The next section describes the syntactic discourse analysis on utterances (oral language) expressed by the different professionals in several formal and informal meetings to gain more insight into the different professional discourse styles across the three cases.

8.4.2 Syntactic discourse analysis on oral utterances

In the syntactic discourse analysis the discourse analysis framework was used to search for typical speech acts, negotiation strategies, communicative support and to identify developments in the conversation phases. Together these measures indicate the general gist of the conversations including the individual utterances of participants. It was possible to see differences between the utterances made by the three professional groups which reflected their professional discourse styles and the progress in the conversations as shown by the four conversation phases. Table 8.10 gives an overview of the discourse analysis performed in each case by representing the scores on speech acts, negotiation strategy, communicative support and conversation phases. The final column gives the total of the coded utterances across the cases, which has been based on the three separate cases as described in chapters 5, 6 and 7. Note that there is no vertical count on totals because totalizing these different types of discourse related analysis would not make sense. A detailed overview of the utterances and the coding can be found in Appendices A through F.

In Chapter 4 the different elements in the discourse analysis framework has been discussed extensively. During the conversations the focus was first placed on the speech acts performed by the different professionals, second, on their negotiation strategy, whether or not explicitly used in the conversations, and third on the communicative support given during the conversations. By analyzing these utterances, it was assumed that insights could be gained into the typical professional discourse of the participants. Finally, the development of the conversations according to the four conversation phases was analyzed in order to obtain an impression of the effect that the different discourse styles might have on the conversational progress.

In Table 8.10 the focus has been placed on the service engineers (see figures in bold print) because this study wanted to explore this particular professional group during the change projects and to view how their professional discourse might interact with the professional discourse of managers and consultants. In Case 3, two service engineers participated in the informal conversation, but because this study focuses on the group, instead of the individual level, their utterances should be added in order to compare these with those in the other two cases. For reasons of transparency, the utterances of the two service engineers have been shown separately.

Table 8.10 Overview of discourse analysis

Cases	Case1 Home utilities			Case 2 Aircraft maintenance			Case 3 Housing association			
Speech acts	Manager	Service engineer	Consultant	Manager	Service engineer	Consultant	Manager	Service engineer 1	Service engineer 2	Totals
Assertives	9	**10**	1	14	**9**	1	4	**9**	3	60
Directives	2	**4**	8	2	**1**	5	2	**2**	1	27
Commissives	1	**1**	1	-	**1**	1	-	**-**	-	5
Expressives	1	**5**	-	6	**1**	-	6	**12**	4	35
Declarations	-	**-**	-	-	**-**	2	-	**-**	-	2
Negotiation strategy										
Non-cooperative	1	**6**	-	3	**2**	1	3	**6**	0	22
Cooperative	5	**4**	2	8	**4**	1	5	**3**	1	33
Communicative support										
General	5	**7**	7	9	**4**	3	4	**2**	1	42
Meta communication	3	**2**	1	6	**4**	4	4	**13**	3	40
Conversation phases										
Initiative	1	**1**	2	5	**3**	3	2	**6**	-	23
Understanding	8	**16**	6	9	**9**	1	10	**12**	5	76
Performance	6	**3**	4	3	**1**	2	1	**1**	-	21
Closure	-	**-**	-	-	**1**	3	3	**4**	-	11

Managers (in all cases) and consultants (in the first two cases) should be facilitators of organizational change; make it happen. Using directives is therefore crucial; 27 out of 129 speech acts (21%). In Cases 1 and 2 the consultants were doing their jobs and they used directives the most. In all of the cases the managers directed modestly. In Cases 1 and 3, the service engineers were the most active for probably different reasons. In Case 1, speaking out and being assertive with assertive managers was the main reason (see 10 and 9 assertives for those participants interacting). The most assertive and expressive participants (12 and 16 speech acts respectively) were the service engineers in Case 3. This was probably because they were well motivated to pursue the organizational change. The balance

between cooperative and non-cooperative strategy of the service engineers was again the same for the Home Utilities case and the Housing association case: more non cooperative than cooperative for similar reasons? In Case 1 they opposed the technical innovation, and in Case 3 they might play the maverick to achieve the right innovation. In Case 2, there was, as expected, more cooperation in the guided missile than opposition. For communicative support it is striking to note that so many meta-communication speech acts were used to facilitate the conversation. This finally coincided with a strong initiative phase in the conversation (5 occurrences). In all of these cases the service engineers demonstrated speech acts the most during the understanding phase. Again, there was a good balance in Case 2: both managers (also engineers) and service engineers (9 occurrences). In Case 1 and 3 the service engineers were good listeners for different reasons (understanding respectively 16 and 17 times), but in these cases the service engineers were also critical and asked for clear answers to their questions. In Case 1, this was because they were forced to interact with managers (16 versus 8), and in Case 3 it was because they were doing a good job together with the managers (17 versus 10). In the last case managers and engineers did a good job again in closing the conversation and coming to a point: 3 versus 4 closure phases. In sum, it might be concluded that the beginning of organizational change success hides in the harmony between service engineers and customers, which is relevant in all cases: the consumer of home utilities, the traveler using an airline and the resident of a social housing association.

Table 8.10 indicates that assertives (claims and evidence) are often used by service engineers. In Cases 1 and 2 both the managers and service engineers use these assertives which can be explained by the technical background of both. Most of the managers in Case 1 have had secondary or higher technical education and the service engineers have received secondary technical education, or at least specialized training on the job. In Case 2 we see a similar coherence because the managers are educated in aircraft technology and so are the service engineers which might indicate minor differences in the assertives. What is obvious is the common use of assertives by service engineers, which might be generic for people who have a technical background. This implies that they would like to be provided with evidence for what needs to be changed (i.e., the implementation of the Tablet PC and MRO system). Service engineers do not take everything for granted, as they are critical thinkers and practical doers. The role of the consultants in both cases is different (e.g., more directing in Case 1 and facilitating in Case 2) which is also clear in their use of directives. Their use of assertives is lower compared to the service engineers and managers, which might suggest that they are less interested in evidence and simply wish to realize the change project successfully.

Change processes are, in fact, forms of negotiations in which power relations play an important role (see Chapters 2 and 3). The data (see Table 8.10) suggests that managers are more cooperative (or less non-cooperative) than the service engineers. This fits with their formal role in the organization, as belonging to the management is often seen as being a change agent and thus being cooperative. In all three cases the managers show higher scores on cooperativeness (respectively; 5-8-5 items) compared to the service engineers (respectively; 4-4-4 items). Although the differences in absolute scores are minimal, during the participant observations it appeared that managers try to pursue their vision on the change project implicitly using their formal power related to their role in the organization. In all three cases the service engineers function as the change targets, and are in a kind of 'underdog' position. They had to cope with these power relations as observed in Cases 1 and 2, representing a technical innovation. In Case 3 management and service engineers also had to deal with these power relations but in this particular case the management was able to share

their responsibility and asked the service engineers to help them, which caused the required shift in behavior representing social innovation.

Finally, the conversation phases of all three cases indicate for the most part the use of utterances as mostly represents the understanding phase of a conversation. This matches the use of assertives by the service engineers because their claims often require questions and answers that will lead to discussions in which they try to understand one another. In Case 1 the performance phase has also been reached, but there is hardly any closure phase, which seems to fit within a machine bureaucracy and a top down planned change approach. The employees rely on the formal structure and procedures to get things done. Cases 1 and 2 show how the managers use utterances that represent the performance phase which is coherent with their goal oriented position and their need to adhere to the change project goals and directives. Case 3 shows that the performance phase is not explicit, but employees do reach the closure phase, which is crucial for taking further steps in the change process. This reflects the professional bureaucracy and an interactional learning approach. Cases 1 and 2 hardly show any closure phase which might suggest that there is a formal agreement on how to proceed (i.e., performance), but in fact nothing really happens. In Case 3 the performance phase seems less important because the change process was about a behavioral change which is difficult to measure. In this case the closure phase is reached.

Managers and consultants in the three investigated cases all use more abstract language as a result of their professional culture, which is due to their managerial education, which has taught them that a more circular way of thinking is needed, one which also takes social and human irrationalities into account. When these different discourses interact, and when the participants are not mutually aware of the deeper assumptions, perceptions and attitudes inducing the professional discourse conversations might fail. Management argues that the service engineers are displaying resistance to change. In contrast, service engineers argue that the management is not being clear enough and that it does not understand what the consequences of the change entails for their daily work.

The results of the syntactic discourse analysis on utterances is depicted in Table 8.10 in absolute scores. Based on Figure 8.2 it is assumed that Case 3 has an optimal organization culture in order to establish change projects successfully. It is possible to verify this indicative conclusion by taking a closer look at the syntactic discourse analyzes when presenting an overall diagram of the different discourse related aspects (i.e., speech acts, negotiation strategy, communicative support and conversation phases). For example, the graphs of Figures 8.3 a, b and c represent the different discourse aspects, without making a strict distinction between the three professional groups, because it is assumed that an innovative culture can only work if there is a mixture of different opinions being voiced and understood by all of the participants. Therefore, these graphs focus on the total discourse of the three cases, and not on the separate professional groups found in Table 8.10.

Figures 8.3 a, b and c represent the absolute scores (i.e., frequencies) as found in the discourse analysis starting with 1) speech acts (5 items), 2) negotiation strategy (2 items), 3) communicative support (2 items) and 4) conversation phases (4 items). The speech acts serve as an indication of the negotiation strategy used, and the communicative support might influence the conversation phases that will have been attained by the participants. This order has also been used in the discourse analysis made of the three cases (see the Appendices A - F) and it is shown in the diagram as the four slices of a pie chart.

The absolute scores in Figures 8.3 a, b and c of course depend strongly on the selected utterances that were coded. As described earlier we saw these utterances as significant statements or meaning units, which reflect the essence of our experiences during the conversations and interactions (Creswell, 2007).
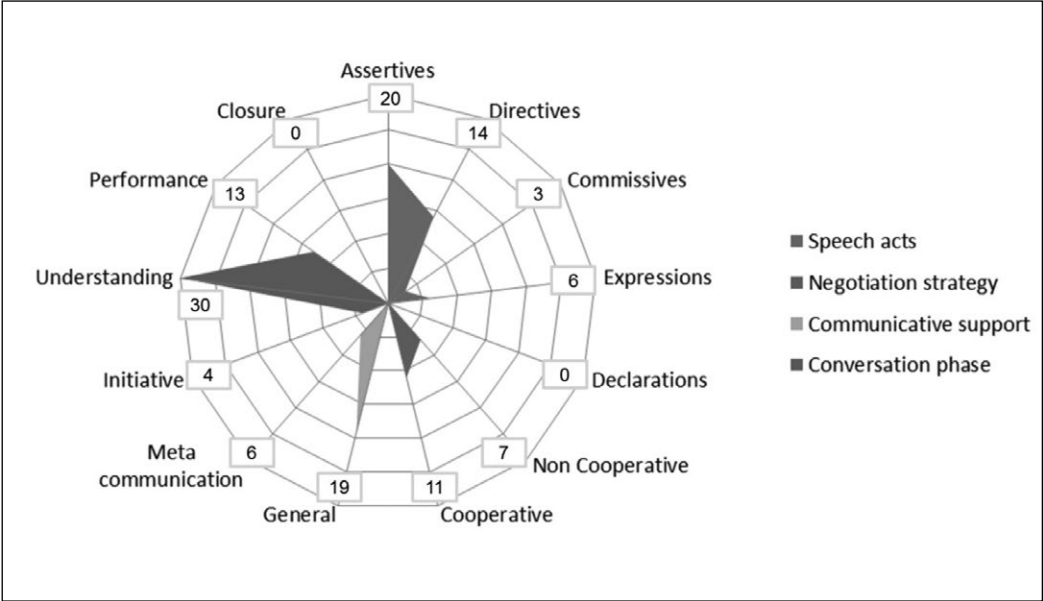
Figure 8.3 (a) Overall scores on the discourse aspects in Case 1 (Home Utilities)
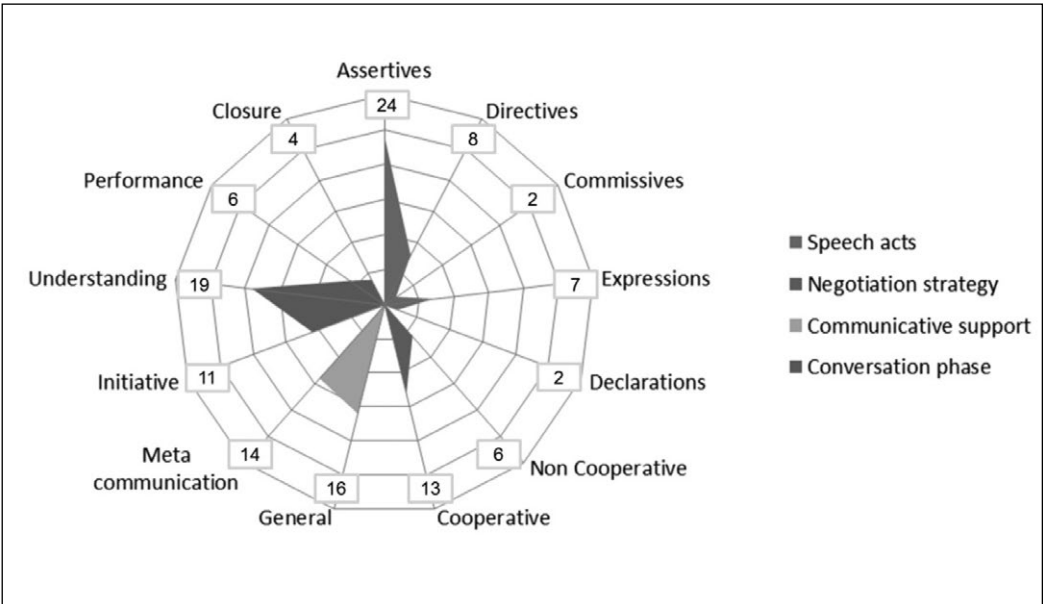
Figure 8.3 (b) Overall scores on the discourse aspects in Case 2 (Aircraft Maintenance)
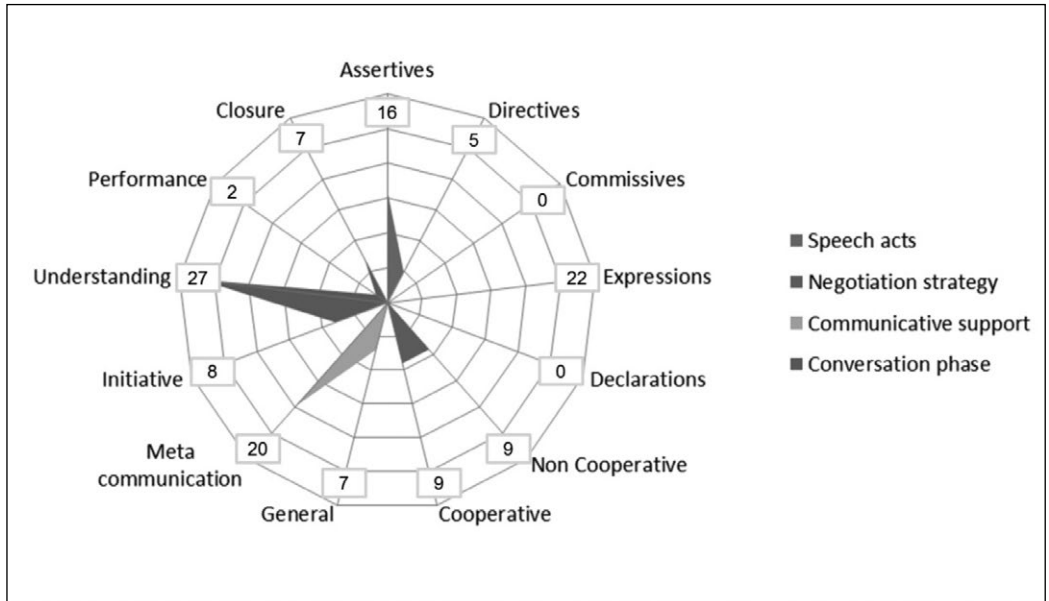
Figure 8.3(c) Overall scores on the discourse aspects in Case 3 (Housing Association)

Figures 8.3 a, b and c depict the total results found in Table 8.10. In Case 1 (visual a) the 'fight' between the assertives and directives (20 versus 14) is clearly visible, a sign of top down talking and bottom up listening to authority, but overall there is hope, there are more cooperatives than non-cooperatives (11 versus 7): They try to avoid an innovation failure, which ultimately did not occur, but took all together some 5 years longer then innitially planned. As stated above in Case 2 (graph b) the better balance between 24 assertives and 8 directives gave a neutral position towards organizational change success. Finally Case 3 (graph c) showed to all of the participants together the best balance between cooperative and non-cooperative (9 versus 9), for Case 2 this was the worse (6 versus 13) and for Case 1 it was not much better (7 versus 11).

As described Case 1 performed negative on the overall change result while Case 3 was considered to be the best. The Figures 8.3 a, b and c focus on discourse only and it is clear that Cases 1 and 2 have high scores on assertives (i.e., claims and evidence) which may fit in with the engineering culture which represents mechanistic and deterministic thinking. This may relate with the focus on technical innovation (i.e., implementing the Tablet PC and a new MRO system). Case 3 shows the lowest score on assertives indicating a primary focus on social innovation.

Table 8.10 shows an overview for each case of the counted utterances and how they were coded using the discourse analysis framework. In Table 8.11 below an overview is given of the totals per case also taking technical and social innovation (TI and SI) into account.

Table 8.11 Overview of totals scored in the total discourse analysis (apart from lexis)

| | 13 measurement points at the sentence level | | | | | | | | | | | | | | | |
| Case | 1. Innovation | | 2. Speech acts | | | | | 3. Negotiation strategy | | 4. Communicative support | | 5. Conversation phase | | | | TOTALS |
	Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure	
1	7	< 11	20	14	3	6	0	7	11	19	6	4	30	13	0	151
2	14	> 9	24	8	2	7	2	6	13	16	14	11	19	6	4	155
3	1	< 9	16	5	0	22	0	9	9	7	20	8	27	2	7	142
Tot.	22	< 29	60	27	5	35	2	22	33	42	40	23	76	21	11	448

Table 8.11 presents the use of assertives (60 items) indicating that the engineering discourse can be characterized by the use of claims, thus asking for evidence, logic reasoning, and problem solving. The Cases 1 (20 items) and 2 (24 items) score the highest on assertives representing the engineering culture in the organization, while Case 3 (16 items) scored the lowest. Of course we are aware of the minimal differences between this number based on the small amount of data points, but we observed these findings in the three cases. In Cases 1 and 2 also the scores on TI are highest (7 and 14 items) compared to Case 3 (1 item).

In Case 3 the change process focused on a required change of behavior for the mainly technically oriented employees. This third case also shows high scores on expressives (22 items) which might indicate that these employees are more open towards each other and able to trust colleagues and management in their open dialogues. Furthermore, Cases 1 (19 items) and 2 (16 items) show high scores on the general utterances, while Case 3 only scores 7 on this item. In contrast, Cases 1 (6 items) and 2 (14 items) score much lower on meta-communicative utterances compared with Case 3 (20 items). This implies that during the meetings utterances were used to facilitate the discussion and keep the communication process going, which is often seen as a responsibility of management. Nevertheless, in this case also the service engineers were able to take this role which shows their independence.

Finally, all three cases show relatively high scores of utterances representing the understanding phase of a conversation in the change process (Case 1: 30 items, Case 2: 19 items and Case 3: 27 items).

In general, these four phases in conversations can be found at the macro level of the overall change process and on the micro level of any conversation (De Caluwé and Vermaak, 2006). The utterances counted in these three cases were all based on transcripts of conversations performed during interventions in the change processes sometime after the formal start of the change project, which means that it can be expected that an understanding phase is essential. It can also be observed that in Case 1 the utterances representing the performance phase is high (13 items) compared to Case 3 (2 items), but the closure phase is the other way round (Case 1: 0 versus Case 3: 7). In Case 1 the planned change approach and the mechanistic organization context seems to adhere to milestones and deadlines expressed in strong statements (i.e., performance). Case 3 shows that in the emergent change approach and the organic organization context more utterances are used that represent the closure phase and thus realize agreements, without any further discussion. They foster progress in the change process.

Table 8.11 also shows the utterances counted during the conversations representing technical and social innovation (TI and SI). These figures might provide an indication for having a primary focus on TI and/or SI in relation with the final change result. When the results of Table 8.11 are compared with those of Table 8.10 and Figures 8.3 a, b and c a simple sign test enables one to see the corollary of the speech acts used with technical and/or social innovation in the three firms. In terms of innovation, Cases 1 and 3 showed that there was more Social than Technical innovation, whereas for Case 1 it is hoped that the need for social innovation will be pursued in the future. In Case 3 this is was expected, and it appeared to be a truly social innovation case. In Case 2, all off the participants were engineers so their focus on technical aspects could be anticipated on. More social than technical innovation seem to lead in Case 1 to assertive cooperation (20 versus 11) and directed performance (14 versus 13) and a lot of understanding efforts (30). In Case 2, with more focus on technical than social innovation we witness again assertive cooperation (24 versus 13) with good understanding (19), but it is average on directed performance (8 versus 6). Finally, Case 3 predominantly social evidences the most expressives (22), enough assertives (16), but disappoints with regard to cooperation (9 non-cooperative with 9 cooperative), although a great deal of effort has been made to increase the understanding (27). The efforts to close a deal are the best across the three cases: 7 as opposed to 0 in Case 1 and 4 in Case 2. This conclusion is fair since the total check points of this discourse analysis are comparable across the 3 cases: 151 versus 155 versus 142. In total, 122 sentences were subjected to a speech act analysis and attributed to 13 (5+2+2+4) different measurement points. The reader will see a total of 397 (448 – (22 TI + 29 SI)) because some of the sentences have been attributed to more than one aspect, while utterances were not attributed to a measurement point either.

Case 1 shows TI and SI scores (TI: 7 and SI: 11 items) because the implementation of the Tablet PC, the related changes in work processes, and the required shift in behaviour for the service engineer all combined together and therefore they had an impact on both the TI and SI. The change project began with the TI (i.e., the Tablet PC) and in the beginning it also paid attention to the SI because of the service engineers needed to develop competencies for their new role as central key figures in the maintenance and repair process and customer orientation. However, during the change process attention shifted towards TI due to the many technical issues that arose when implementing the Tablet PC (i.e., bugs in software applications, difficulties with *wifi* in the field locations, built into the car kits) the attention for SI seems to be less. Nevertheless, the implementation of the

innovative Tablet PC was seen by the service engineers as a major shift in their work context (i.e., roles in the work processes).

Case 2 shows different scores (TI: 14 and SI: 9 items) which indicates that the implementation of the new MRO systems had an impact on the service engineers' work content (i.e., working with other software, the new look and feel) but the impact of SI was small because work context (i.e., role in the work processes) was not affected that much. The change process in Case 3 began in a completely different way with most of the attention being used on SI (9 items) and hardly any on TI (1 item), which fits with the implementation of the strategic vision, in which the service engineers had to become more customer oriented, hence requiring a shift in their behaviour (i.e., work context), but there was not that much difference in the work content. In Case 3, the SI was illustrated in the organization of the five conversation sessions, which were deliberately planned interventions to realize mutual perceptions and effective communication between all of the stakeholders, particularly because they had been organized into separate districts. The high score on expressives (22 items) reflects the feelings and perceptions of the service engineers in regard to the required change influencing their daily work context.

When the results above are compared with the change results, described earlier in Table 7.1 for each case, than it was assumed that innovative change processes could best be started in an egalitarian and person oriented (see Figure 8.2) organization context in which change unfolds and is not planned according to strict project initiation documents, milestones and predefined deliverables. This requires from every participant (both managers and employees) the courage to start open dialogues in which implicit assumptions belonging to the professional discourse of the group are made explicit when interacting. Therefore, the managers need to "seek first to understand, then to be understood" (Covey, 1989) by first defining what the playing field of the change is, but they did not by interfere in how the change needed to be played.

Ulijn and Strother (1995) also mention the importance of first listening and then speaking for managers, which can be seen as the emphatic listening skill suggested by Covey (1989). Due to the detailed knowledge possessed by the service engineers regarding their own daily work, the managers could not answer their detailed questions. By trying to do so (i.e., interfering with) management would actually create resistance to change. The service engineers are able to deal with difficult questions and are focused on solving problems. Nevertheless, when asked to help, then the management should facilitate and support the service engineers in the change process. As example the management can support in helping the service engineers with writing documents, making presentations (as seen in Case 2), and help in the decision making process (as seen as in Cases 2 and 3). In that sense managers facilitate the service engineers instead of telling them what to do and how to do it. This form of interactional learning is required in change processes in which trust, open dialogues and the possibility to co-create change are positive building blocks in the interaction process.

Finally, open dialogues require mutual trust between the participants involved in the change process, which is not created overnight. Especially in Case 1 the organizational context seems to have created a situation of distrust, whereas in Case 3 the connectedness seems to have enabled trust. This implies that change processes can be conceptualized on a macro or global organizational level (i.e., strategic visions), but there is a need to emerge on a micro or local level (i.e., sensemaking in a group). The well-known quote, think global and act local, is in some way applicable to this

situation in which the management must abandon their preferences in order to control the situation, including the reactions of employees involved in the change process. Within a technical environment, the controlling-state-of-mind is a logical one, but in social systems, which in fact organizations are, this will not work.

After describing and analyzing the syntactic discourse, Section 8.5 focuses on professional culture and discourse by trying to unravel the mixture of professionalism and the professional discourse that may go along with a particular professional culture. Although it is not the goal of this study to investigate professional culture and discourse as two separate entities, it is interesting to know how different professional discourses affect the dynamics of change processes in organizations. This study assumes that professional culture and discourse are two sides of the same coin which cannot be studied as two separate concepts, also in their interaction or their mutual referencing: Who says language says culture and vice versa.

8.5 Professional culture and discourse

Chapter 3 described the development of a professional culture through the early stages of professional education followed by a process of identification with the group. This can be seen as creating a professional habitus, parts of which is firmly based in the professional discourse and culture. Lang (1993) investigated the relationship between culture and negotiation and developed four profiles of professional cultures; 1) politicians, 2) economists, 3) lawyers and 4) engineers based on their negotiation skills. The indicices in the work of Lang (1993) were 1) cultural values, 2) cultural perspectives and 3) negotiating style. Based on the discourse analysis framework of this study it was possible to expand the overview of Lang with the findings of speech acts, negotiation strategy, communicative support and conversation phase for the three professional groups investigated (service engineers, managers and consultants). This is in addition to the work of Lang and partly confirms his findings regarding the (service) engineer. Table 8.12 gives the indices for the profiles of the PC of the three professional groups investigated in this study.

Table 8.12 shows the differences in professional culture of the three groups and additionally how this comes to the surface by their professional discourse. The engineer wants to know how the change process will work out, what the expected result will be, and will that be technically alright. He focuses on details wanting the best (technical) result. The manager has a more abstract reasoning and want to achieve long term organizational goals which is possible with the help of his subordinates. The consultant predominantly has a facilitating role with no formal hierarchical power. With the combination of his personality, knowledge of several scientific disciplines (e.g., management, psychology, communication), ethical and trustful behaviour he is able to facilitate the organizational chance process.

Table 8.12 Profiles of the PC of engineers, managers and consultants (based on Lang, 1993)

Indices	Service engineers	Managers	Consultants
Cultural values			
Believe in:	The law of physics	The measurable facts and the law of economics	Both objective and subjective aspects. Theories and models
Have respect for:	Technology, materials, computations and design	Facts and figures, time, budget, planning and dead lines	The customer, and a serving role towards the organization
Cultural perspective			
See themselves as:	Problem solvers	Representative of the organization achieving organizational and departmental goals	Expert, process facilitator or partner helping the customer to achieve his (organizational) goals
Express themselves through:	Numbers, facts and work experiences	Words and written documents	Words, written documents and personal behavior
Suspicious of:	Timely project implementation and worker performance	Timely project implementation and results. Power relations	Socio-political variables, power and project results
Speech acts	Ask for evidence or proof. Need to know the details. Try to find gaps in a story	Give explanations about the overall situation, ask for commitment and request for actions	Explain and ask participants to commit to the change process. Use of personality and create trust
Negotiation strategy			
Negotiation role	Technical specialist	Initiator and leader	Facilitator
Negotiation focus	Technical specifications	Project results within time and budget	Cooperation and the most optimal result
Future concern	Implementation of product or service	Realizing the strategic goals of the organization	Satisfying the customer, extend the job or keeping a good customer relation
Communicative support	Ask for understanding and detailed information	To resume and conclude. But also to offer or promise follow-up actions	Facilitate the communication and cooperation between participants
Conversation phase	Trying to understand the (technical) details and asking for evidence that the new situation will work	Interplay of requests and promises to produce a specific result	Facilitate the conversation to bring about an end to the interaction with the goal to proceed

Furthermore, Wanrooij (2001) explicitly mentions five aspects of the professional (1. specialized work, 2. autonomous work, 3. group identiy, 4. job involvement, and 5. financial focus) which are now discussed in relation to the three cases with a focus on the service engineer. The service engineers in our three cases can be 'rated' (high, medium or low) on these characteristics. In all cases the service engineers score low on the financial focus (e.g., they are not aware and/or interested in the financial consequences of their decisions and work related actions) hence, that characteristic will not be discussed. Case 1 shows that all of the service engineers score high on the five characteristics. Their work is highly specialized working on electricity or gas in the home utilities. For instance, service engineers who work on the electricity circuit are specialized in weak, strong and high current installations depending on their professional education. They are certified for that particular type of installations and regulations prohibit them from working on other installations. The service engineers often work autonomous in a way that they can start the working day with picking orders using their Tablet PC and then drive in their fully equipped maintenance vehicles to the customers. Sometimes, they work with colleagues when a job is more complex or requires different specialized service engineers. Within the team of service engineers, the collective identity is strong because they are completely depending on their team in order to solve problems. During the participant observation of the regional kick off meeting it was observed that the team-loyalty comes on the first place, then the departmental level and third, the regional organization. The job involvement is high and service engineers truly want to perform a good job (in this 'what is good' is often defined by the service engineers themselves) and to satisfy the customer's needs.

In Case 1 a few of the service engineers did not understand why they had to become more customer oriented because in their perception they already were, and in fact they had more customer contact then the management did. The high rating on these characteristics confirms a strong professional engineering culture. When this is combined with the hierarchical and task-oriented organizational culture (see Figure 8.2), together with a high uncertainty avoidance index (UAI) and a high power distance index (PDI) in a planned change approach with a primary focus on technical innovation (followed by social innovation) this all together might possibly lead to the failure of the change project.

The service engineers in Case 2 are specialized in working on aircraft types (type ratings), which means that they are certified to work on one typical sort of aircraft, but not on any other aircrafts. Furthermore, the work of the service engineers is highly specialized in, for instance working on specific parts of an aircraft such as avionics, mechanical equipment or engines. Due to the work that needs to be carried out in a centralized hangar on the airfield, the service engineers are less autonomous. They have a maintenance task which must be accomplished between flights and they are working under the supervision of their team managers and they can have direct contact with other employees from, for instance Purchasing and Logistics or Engineering. Solving unexpected technical problems is more a team performance compared to work in Case 1. In Case 2 team identity is also very strong, which was further strengthened by the day-, evening- and nightshift in which the teams worked. When one team took over a shift the team managers had contact for about half an hour, but the service engineers only saw each other briefly. Mostly the shifts had no overlap in time and the cohesion between the teams was minimal. The team formation was sometimes fixed for several years and the older experienced service engineers instructed the new ones imposing their habits and informal rules on the younger employees. The job involvement of the service engineers is also high because they all have a strong feeling of commitment and responsibility to deliver a technically safe aircraft to the operations department, which is responsible for flight execution.

Compared to Case 1, only the medium rating on autonomy is different, because of the involvement on the side of the service engineers (i.e., the super user group) from the very beginning in the change project of Case 2. Employees see each other often as they work in one location and they are used to solving complicated problems together, which might be positive in the change process. Case 2 can be plotted in Figure 8.2 as an egalitarian and task-oriented organization culture, which has a medium UAI and PDI which seems to fit in with the cooperative planned change approach and the focus on technical improvement of the current MRO system.

In Case 3 the service engineers have a more generic technical knowledge related to housing construction work, but that specific knowledge is used for determining the condition of, for instance a bathroom, a kitchen, the walls, a roof, or the condition of the electric installation found in the houses. The service engineers possess the necessary knowledge to carry out an inspection, but the actual repair and maintenance work is done by the craftsmen, which explains the medium specialized rating in Table 8.3. Working in one of the districts, together with a few other service engineers, gives them a high autonomy in how to do their job and what decisions they need to make. Within the districts these service engineers have the freedom to decide whether or not to do specific repair and maintenance work for the tenants. This falls within the organizational procedures and guidelines, but in the discussions between the engineers of the different districts it soon became clear that the 'same guidelines' were being interpreted in various ways. This 'autonomy' formed an organizing principle as well by giving the employees the freedom and responsibility to determine what is the best thing to do for the tenants. The group identity of the service engineers was primarily coupled to the district instead of to the group of service engineers as a whole, and therefore rated as medium. Finally, the service engineers have a high job involvement and they want to do their best for the tenants, but they seem to have a clear opinion about what is 'the best.' All together the organization culture can be seen as egalitarian and person oriented with a low UAI and low PDI, thus represented the open conversation sessions that were organized during the change process. The change process (implementing the new strategic vision) also entailed a social change (i.e., requiring a change in behaviour) instead of a technical change therefore focusing on social innovation. Table 8.13 gives an overview of the rating for the five characteristics of the service engineers (based on Wanrooij (2001)).

Table 8.13 Service engineers rated on characteristics of the professional

Professional characteristics (Wanrooij, 2001)	Case1 Home utilities	Case 2 Aircraft maintenance	Case 3 Housing association
1. Specialized work	Highly specialized	Highly specialized	Medium specialized
2. Autonomous work	Highly autonomous	Medium autonomous	Highly autonomous
3. Group identity	High group identity	High group identity	Medium group identity
4. Job involvement	High involvement	High involvement	High involvement
5. Financial focus	Low financial focus	Low financial focus	Low financial focus

When using these insights regarding professionalism and when looking back in retrospect at the diagrams in Figure 8.3, the combination of assertives and understanding appears to be interesting. If it is assumed that assertives represent the professional culture of service engineers, it may be that in Case 2 (24 items) the professional culture is more consistent, which can be explained by the shared aerospace background of all the employees (i.e., managers and service engineers), but the high score on understanding (19 items) may also indicate that the employees often have discussions (based on the assertives) but that they do not have the ability to listen emphatically in order to fully understand what is at hand. Case 3 shows the lowest score on assertives (16 items) together with the highest score on understanding (27 items). This may indicate that the professional culture in this case is more adaptive compared to Case 2, which allows for more openness, emphatic listening and real understanding.

In addition to the typical professional discourse and culture some general topics emerged which are influential factors bound up with the change process. First, in all three cases management discourse is often perceived by service engineers as abstract and generic, and that it does not fit within the concrete daily activities and problems of the service engineers. Moreover, the written language in formal project and organization documents are perceived to be abstract by the service engineers. Managers do not seem to be aware of the distance between their professional discourse style in written (project) documents and the service engineers' professional discourse, and how this might imply that the service engineers are using sense-making processes.

Second, all three cases indicate that the discussions between the service engineers resemble 'unguided missiles', and that they have a 'shoot and react' way of communicating in which it is seldom the case that performance and closure phases are reached.

Third, the cases also signal that the service engineers often mentioned that problems or issues in the organization or change process are not directly their fault. Often other employees, departments, and/or systems are seen as the reason why for instance the service engineers cannot properly perform their jobs. Service engineers are used to thinking in concrete terms and their focus is on

doing, which is closely related to the technical aspects of the job in which problems have to be solved in the best way. Managers and service engineers should keep these contradictions in mind when they talk to each other.

To conclude, it may be possible that a more consistent professional culture can be characterized as having high rates on at least the first four characteristics out of the five mentioned in Table 8.13, hence indicating that there is a high degree of specialization, a deep wish to be (and stay) autonomous, belonging to a group of peers, together with a strong job related involvement as seen in Case 1 and to some extent in Case 2, but very little in Case 3. The functional organization structure in Cases 1 and 2 might even increase the 'power of the professional culture' because employees are functionally grouped together to support the group identity. Case 3 shows the opposite by having an integral organization structure (i.e., the districts) with a mixture of service engineers, district coordinators, account managers, and to some extent, customers services.

An important conclusion of this cross case analysis is that the professional culture and discourse alone are not enough to understand how discourse affects the change result. The final change result is a combination of 1) professional culture, 2) organizational culture and 3) change context. Figure 8.4 shows a tentative combination of these three influencing factors as three axes. Depending on the position on every separate axe it is possible to draw a triangle, which might represent the overall change result. Within this explorative study and based on the limited data gatherd, this must be considered as an proposition and hypothetical extrapolation of the findings. Based on the three cases studied, it can be assumed that the greater the triangle, the better the organizational change result, which is then seen as a combination of the three aspects. This might be seen as a basis for future research.
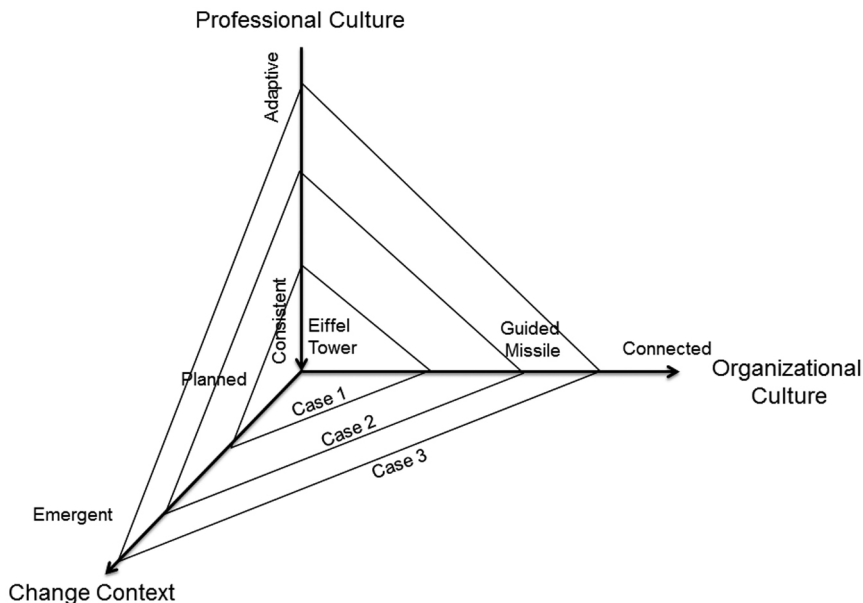
Figure 8.4 Three cases positioned as a combination of professional culture, organizational culture, and change context and the optimal change result

Case 1 represents the smallest triangle in which the professional culture is persistent and which leads to many discussions, since the professionals wants to hold on to his autonomy and professional identity, which is further strengthened by the organizational culture (i.e., hierarchical and task oriented) or so called Eiffel Tower combined with a planned change approach in the change context. This combination seems to lead to an unsuccessful change result represented by a small triangle. In contrast, Case 3 represented by the large triangle shows a more adaptive professional culture within a person oriented and egalitarian organization culture using an organic and emergent change approach, which then seems to lead to more successful change results. In fact, a persistent professional culture and accordingly the discourse used, might result in a clash of (professional) cultures that could be even further enlarged by the hierarchical and functional organization structure and a planned change approach. These aspects together hardly stimulate the interaction between different professionals. It might be that within a formalized change process, within a functional and hierarchical organization structure, and persistent professional cultures, these professional differences are hardly discussed.

Figure 8.4 is a tentative manner to combine these three possible determinants of successful change which can only be interpreted in this study, not measured. Based upon the insights from the seemingly most optimal innovation and change culture of Figure 8.2 and its linguistic analysis through Figures 8.3 a, b and c and culturally through Figure 8.4, we may hold for change projects driven by innovation the organizational culture of the connected island culture would be the most applicable, at least for the inception of the innovation from a personal and organic perspective. This would include social innovation through creativity, design and flexibility in a network of different professional cultures, such as the ones in which engineers, managers and consultants interact in a cooperative way.

Figure 8.4 confirms what was expected in Figure 8.2 by positioning the three cases with a perspective on innovation within their organizational culture with regard to technical and social innovation. Case 1 is exclusively technical innovation in a mechanistic way, Case 3 is the opposite: Social innovation facilitating the technical innovation in an organic way and Case 2, our most technical case, takes an in between position including technical innovation followed by some social innovation. The main focus on technical innovation in Cases 1 and 2 resulted in a less positive change result. The extant discourse differences between the professional groups studied in Cases 1 and 2 seem to have been amplified by these contextual factors. In Case 3 the professional discourse differences also exist, but the egalitarian and person oriented organizational context implies an organic emergent change approach in which dialogical conversations are explicitly scheduled as interventions. This seems to diminish the professionals' differences subsequently leading to a positive change result. It can be concluded that the optimal change program should start with social innovation first, and then be followed by technical innovation as evidenced by Verhoeff (2011) or at least the change process should pay attention to social innovation when implementing a technical innovation.

PC should not be too consistent, in regard to the OC of the incubator, since the market village of the network organization might be the best for an optimal organizational change towards innovation (first social then technical). With regard to cultural values, engineers believe in the law of physics and have respect for technology, computations, materials and designs. In a cultural perspective, they see themselves as builders and problem solvers, in which they express themselves through numbers and their work and they are suspicious of strict timely project implementation and

worker performance. With regard to negotiation strategy, they assume the team role of the leader or the technical specialist; they focus on technical specifications, in our cases of technical services. Project implementation is a future concern and their communicative style is precise and quantitative.

The results clearly show a difference in the typical professional discourse and culture of service engineers, managers and consultants, and it may be concluded that the assumptions that have been based on professional discourse and culture, hamper the interaction between these professionals when they are not made explicit, and as a result they could affect the change process negatively. All in all, Case 3 reached the required change goals through an effective discourse and culture interaction of service engineers, managers and consultants. Case 1 failed to do so and in Case 2 the effective cooperation through a discourse and culture match brought the firm half way towards achieving a successful implementation of a technical innovation. The quote; *"Managers sometimes see us as little children…"* in Case 1 could also be heard in Case 2, but not in Case 3 which in turn might indicate that there is quite a different mindset towards their employees among the managers.

8.6 Summary and conclusions

This chapter compared the three cases as described in Chapters 5, 6 and 7 by trying to determine how professional discourse and culture interaction affects successful change. Figures 8.2, 8.3 and 8.4 show the central line of this chapter.

First, we can conclude that the influence of *the organizational and change context* on the overall change result makes the change process complicated and hampers the interaction dynamics between the three professional groups. Case 1 shows that the organizational and change context creates barriers for open and informal conversations, while in Case 3 the absence of these hierarchical contextual factors seems to facilitate the more spontaneous change process and creates open spaces for sharing, understanding and sensemaking. Second, project related documents of Cases 1 and 2 show that typical words (i.e., *project* and *plan*) represent the more functional and technical (project) management approach, whereas in Case 3 the focus is on the change goal (i.e., *service engineer* and *customer*). Third, it became clear that overall assertives and expressives are used most and can be related to the understanding phase in the conversations. It seems that assertives are speech acts that are often used by service engineers indicating their professional culture, and their professional habit for understanding how things work in a technical environment. Finally, Figure 8.4 tries to combine the three influential aspects on the overall change result. It seems that an less strictly planned change approach, within an connected island organization culture, with an adaptive professional culture assures the most optimal change result.

With regard to future research all three cases strongly suggest that studies on organization change should incorporate linguistic discourse analysis (both lexical and syntactic) for understanding inter- and intragroup dynamics better. This could produce new perspectives on the causes of failure and/or successes of change programs. In general, the three cases show that research on change effectiveness should pay more attention to the differences in professional discourse and culture in cross-functional interaction. It seems to be difficult for professionals belonging to different groups, such as service engineers and managers, to develop a shared mental model when they are not aware of and sensitive to their own professional discourse and the professional discourses of others. By focusing on these intergroup relationships, organizational change might be better understood.

Chapter 9
Discussion, conclusions and implications of this study

This final chapter summarizes this study and answers in the first part the main research question including the subquestions. Using the findings of this study a proposition is made for an 'ideal' process for change programs, including TI and SI in organizations when service engineers are involved is described. First, Section 9.1 describes what was done in this study followed by the most important findings and conclusions in Section 9.2. In Section 9.3 the research question and related subquestions are answered leading towards the practical and theoretical implications of this study in Section 9.4 including a reflection on the content of this study and the methodology used. Section 9.5 gives suggestions for future research. Finally, Section 9.6 gives a brief summary.

9.1 The ideal change process when service engineers are involved

Chapter 1 introduced the problem statement, including the research question and aim of the study. The main research question was:

What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?

By answering this question, and the related subquestions, this study aims to provide practical suggestions for professionals (i.e., managers, service engineers and consultants) on how to make their implicit professional assumptions, which form a part of their professional culture, more explicit by their professional discourse when interacting with other professionals in change processes.

Chapters 2 and 3 of this study described the theoretical background by giving two 'extreme' perspectives on both change management and pragmatic linguistics, which led to the assumed theoretical gap in literature (see the problem statement in Chapter 1) indicating the relevance of this study for both theoretical and practical purposes. For change management the focus has been placed on the theoretical perspectives of planned and emergent change, whereas in the linguistic literature the representational (monological) and conversational (dialogical) schools are seen as 'polar anchors' on a continuous scale. This study combines these two scientific fields since it is argued that change processes are all about social interaction between different professionals who use their typical professional discourses, thereby taking a social constructionist perspective. The combination of the scientific fields and the different perspectives are shown in Figure 9.1.
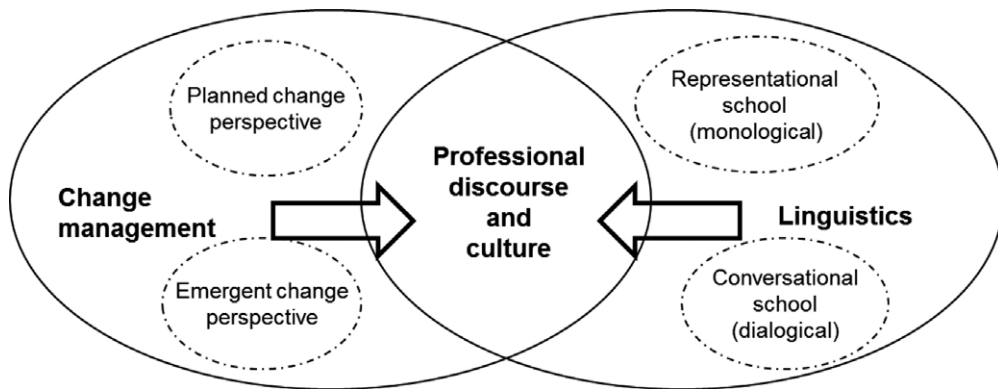
Figure 9.1 Scientific fields and different perspectives used in this study

From the literature review, it was noticed that within the change management perspectives described, discourse-based approaches for understanding change dynamics are relatively under-utilized by researchers and practitioners. Within the linguistic literature much research can be found that is related to discourse and language usage, but it is hardly ever linked to the field of change management.

Finally, this study showed the relevant implications for professionals (i.e., managers, consultants and service engineers) who participate as stakeholders in organizational change programs. By investigating organizational change processes from a discursive angle a contribution is made to obtain fresh insights into the interaction dynamics between different professional groups and how that may affect organizational change.

Methodology
In this study the phenomena investigated were new and emergent, concepts were often unclear and vague, and variables were poorly measurable and not operationalized. In addition the 'what' and 'how' questions of this study made an explorative and qualitative approach acceptable. As a consequence, this research design leads to case studies being the most appropriate and flexible approach for answering the main research question. Therefore an in depth multiple case design was used to capture the data in a real-life situation instead of to conduct research 'on the organization.'

The focus within each case dealt with three professional groups (service engineers, managers and consultants) working together in an organizational change program and their typical professional discourse and culture. We made a subjective judgment of the change results in the end of the three cases with similar professional groups, but within different organizational and change contexts, different change approaches, and different change objectives. The three cases were described in parallel by using the same methods to analyze the professional discourse and by adding Technical and Social Innovation (TI and SI) in a cumulative way.

The specific role of the researcher as an participant observer, who took an 'in-between' situation required regular sessions in which the data was discussed with 'outsiders', traceability from the initial data to the conclusions, self-reflection, the use of multiple methods, and ethical standards.

For data collection this study used multiple methods (i.e., desk research on formal documents, semi-structured interviews and discourse analysis of formal and informal meetings) within each of the three cases. The discourse analysis framework consisted of four different types of discourse analyses: 1) speech acts, 2) negotiation strategy, 3) communicative support, and 4) conversation phases. This study combined these four methods to gain deeper insights in the interaction dynamics of participants and the possible effect on the change progress. The data was mainly analyzed in a qualitative way by using coding protocols, inter coder reliability, and quantitative analyzes (i.e., word count) of documents. Using these different discourse methods together and analyzing the research data in both a qualitative and a quantitative way uncovered the dynamics of the sensemaking processes among different professional groups and the problems they had in cooperating and reaching agreements.

9.2 Differences and commonalities across the three cases

The three cases studied had of course commonalities and differences. All cases had in common that service engineers, managers and consultants were involved in a technical or social innovative change process. Differences were found in the organizational and change context, but also in the typical use of professional discourse during interactions. Next, we describe the findings per case.

Findings of Case 1
First, the service engineer can be described as someone who thinks and acts in a logical and operational manner. He is a critical, rational thinker, who is result driven and has an aversion for abstract and emotional thinking or vague or unclear goals. The professional culture of the service engineers is practical, task-oriented, problem solving, and result driven. Second, the organizational context in this case was regarded as a complicating factor in the change process. The organization structure and work processes fit the machine bureaucracy. The regional/departmental dispersion and the functional structured organization affected the change process in a negative way. The organizational context seemed to fit with the change context as described in this case. In the machine bureaucracy we observed traditional top-down directed planned change approaches in which a centralized project group did the thinking and made the change plans, followed by a sender-receiver form of communication. Both the physical distance and the monologic communication created resistance to change according to the change project team. The service engineers did not feel they were resisting; they would try to do their work in an way they were used to. This can be seen as a potential conflict between the OC and PC.

The discourse analyzes show subtle differences between the service engineers and the (team) managers, but the differences between these groups are minimal. This can be explained by the fact that most team managers shared a technical background (i.e., secondary or higher technical education as mechanical engineers or electricians) and therefore they could understand the service engineers just by sharing quite a similar professional culture and discourse. Nevertheless, there were also (team)managers with a more general education (i.e., higher technical education in

business management), which already gave differences in the professional discourse. The discourse differences were clearly seen between the (internal) consultants and the service engineers, and as a consequence this appeared to slow down the change process. This was also seen in the discourse analysis regarding the conversation phases, which omitted utterances that could be coded as 'closure.' In the formal written language analyzed, mainly functional topics were found such as: *application design*, *testing*, *training*, and *planning*. The change project team was aware of the social aspects that were prevalent in the change process (e.g., matching expectations and coping with possible resistance), but the participation and involvement of the service engineers was limited. This can be explained by the contextual factors such as organizational structures and the implicit assumption that change projects need to be organized according to the planned change. In general, it can be concluded that the organizational and change context complicated the change process. Nevertheless, the change project team was aware of these complicating factors. Due to the subtle discourse differences between service engineers, and their (team)managers it was less obvious to discuss implicit assumptions. The discourse differences between for instance the internal consultants and the service engineers during the regional kick-off meeting were more obvious. Service engineers asked for a detailed planning and specific software problems, but the consultants answered in general terms or that they would come back to that issue later. It is assumed that these, seemingly small differences were another complicating factor in the change process.

Findings of Case 2
Case 2 has two important differences when compared with Case 1: first, the difference of the organization context, and second the similarity of the educational and professional background of the employees (i.e., all have an aircraft/aerospace technology background). The organization context can be described as an adhocracy: an organization that takes advantage of opportunities, solves problems, and strives towards quick results. Especially the 'problem solving' was particularly applicable to the aircraft service engineers. They always had very hands-on and practical ways to solve problems, for instance, the temporary work-around when the MRO system did not have all functionalities that were required, and the service engineers together developed a procedure for that during lunch. Furthermore, the organizational context showed a centralized technical department at one location, which made the 'potential connectivity' between employees easier, and the cooperation during the change process less complicated compared to Case 1. The second difference related to the coherence of the professional culture of employees who work in the technical department of this aircraft company. Their educational background in 'aircraft technology' provided a kind of base for their common professional discourse, the 'aircraft engineering discourse.'

The change context in this second case can be compared with the first because in both cases an innovative ICT system was implemented. However, the change approach in both cases was different. In this case also a rational planned change approach was in place (e.g., with a project group, formal project documentation, roll out planning and milestones), but in this particular case there was a mixture of top-down and bottom-up cooperation between the management and employees. The 'big picture' was enforced by the managerial level, but the detailed knowledge to fulfill this change came from the super user group in close cooperation with IT specialists. This approach positioned the service engineers really in the 'driver seat' enabling them to be responsible for the change process and the final outcome.

The findings of the discourse analysis showed that, although there was a common professional background and culture (i.e., the engineering culture), there were still differences between the professional groups (e.g., Aircraft Maintenance, Engineering and Purchasing & Logistics) and in addition, between management and shop floor employees. The departmental splits showed that, besides different professional discourses, also the role/function could be different and affect the change process negatively.

The discourse analyses on formal project documents, semi-structured interviews, speech acts, negotiation strategies as well as the conversation phases show that all employees used assertives in their discourses which appeared to be quite typical of the service engineers. The general discourse of the written project documents is formal and technical (i.e., *inventory*, *authorization*, *project*, *plan*, *work instructions*) illustrating abstract discourses that were often used by the managers and project managers in this case. The semi-structured interviews revealed other insights in the discourses, that differences could be related to the specific department an employee works. This indicates that there is an sub-culture within the PC in this case related to the department where the professional is working.

The speech act analysis made of both the formal diagnostic workshop and the informal conversation afterwards shows again the typical use of assertives by managers and project managers, but hardly any commissives, which indicated poor commitment, at least not an outspoken form. In general, the formal meeting showed a cooperative negotiation strategy for the managers and the project managers, some non-cooperativeness and the use of communicative support especially by the general management. Moreover, in the formal diagnostic workshop utterances mostly represented the understanding phase in a conversation while the performance and closure phases were hardly addressed indicating that discussion and sensemaking is still important for the participants of this meeting. The informal conversation with the two project managers afterwards also showed the use of assertives and the importance of understanding while explaining to the consultant what historic events (i.e., the reorganization) might have caused the lack of cooperativeness on the part of one of the managers. This 'connecting with the past, to understand the present and cooperate for the future' is an important part in every change process and are often covert for external consultants because they are only temporarily workers in the clients' organization.

It can be concluded that in this case a lack of reflection upon these differences in discourse styles probably caused the relationships among the professional groups to deteriorate. Professional groups scorned each other in both formal and informal conversations, leading to difficulties in reaching performing and closing conversational phases. The analysis of the negotiation strategies indicated that formal conversations predominantly showed cooperative strategies, which can be seen as 'on stage' vocabulary (Homan, 2005). Our observations in informal settings showed sometimes the opposite, namely that utterances of the participants were more non-cooperative, which is the informal 'off stage' vocabulary (Homan, 2005). This might be another reason for the fact that many discussions did not extend beyond the understanding phase.

As an addition to the contemporary literature on resistance to change, the study illustrates that resistance to change and difficulties in cooperating within a specific change project can be related to unarticulated non-alignments of different discourse styles when professional groups, who have different professional cultures, interact. In general the findings showed that the effect of different discourses is important in change processes and that more attention should be paid to professional discourse and culture instead of focusing on communication in general and organizational cultures.

Findings of Case 3

This case differs from the two previous cases because of its different organizational context, and above all the different change context. The more emergent and organic change process in this case made it possible to create a conversational setting in which service engineers, district coordinators and managers made their implicit assumptions explicit. The conversational setting supported the sensemaking and building a trustful relation between the different professional groups. The five interactive sessions can be seen as separate interventions, but in fact formed a specific learning environment for all participants to discover collectively what the new strategic vision could mean for their daily work.

The findings show that the lexical analysis (i.e., word count) of the formal documents revealed that increased attention was being paid to customer orientation (i.e., *residents*, *customers*, *employees*), which was the main driver for implementing the change required in the service engineers' behavior. The following quotes were taken from the semi-structured interviews and show the vertical gap between the management and the service engineers (i.e., the vertical communication):

District manager: *"At this moment, we are working like a network organization, results count (what), but not the way how it is done. The new role of the service engineers is clearly communicated."*

District coordinator: *"Communication about the change process is not very good. In fact, there is not much communication about this at all."*

Service engineer: *"Our Management Team does not communicate clearly change results or directions."*

Besides the vertical communication gap the semi-structured interviews also revealed a horizontal gap in the organizational communication, indicating that the communication between the service engineers working in different districts (i.e., the horizontal communication) had to be improved with regard to the proposed change. The following parts of quotes show the different perceptions:

District coordinator: *"Service engineers working in a different district have no regular meetings across the districts."*

Service engineer: "*Each district can make its own detailed agreement with customers. This is sometimes very confusing. We miss the collegial communication with other service engineers from other districts to learn from each other more efficiently."*

The discourse analysis showed that service managers predominantly resort to assertives and expressives, while the district coordinator used fewer of these utterances. A lack of reflection upon these different professional discourse styles probably caused some misunderstanding among the professionals in this organization. Also the negotiation strategy indicate that the service engineers expressed their reservations concerning the role of management in the change process, leading to a non-cooperative negotiation strategy and difficulties in establishing performance and closing conversational phases.

During the five conversation sessions evaluations included positive reactions of the participants, but during informal settings the utterances were identified as being non-cooperative and more meta-communicative support was used in the communication. Naturally, the use of meta communication should not necessarily be perceived in a poor light, because it can be used by the managers to facilitate the communication between the different professional groups. However, when it is not explicitly pre-mediated by managers, it might account for the fact that many discussions did not extend beyond the understanding conversation phase.

This case study has limitations because the quotes above representing the vertical and horizontal communication only reflect a part of all the discussions that were held in the conversation sessions. The patterns observed, however, were clearly recognizable in the five interactive sessions and can be considered as characteristic of the interaction that takes place between the professional groups indicating their different professional discourses and cultures. The discourse analysis was based on the transcripts from only one informal session with a group of employees and the selection of utterances in the discourse analysis is subjective, although it does represent the crucial interactions of the informal meeting, thus reflecting the overall gist of the discussion.

Overall it can be concluded that the three cases are comparable but when taking the three PCs of the service engineers, managers and consultants into account, also have considerable differences such as organizational structure, number of employees involved, different change approach and the specific driver for change. These aspects which all influenced the change process apart from the professional discourse differences between the three professional groups investigated. Based on the perspectives on innovation within the organizational context (adapted from Ulijn and Weggeman, 2001) Case 1 is a hierarchical, task oriented organization with high UAI and PDI scores while Case 3 is situated as egalitarian, person oriented with low UAI and PDI scores. Case 1 shows that the organizational and change context creates barriers for open and informal conversations while in Case 3 the lack of these hierarchical contextual factors seems to make an emergent change process possible, creating open spaces for sharing, understanding and sensemaking. Cases 1 and 2 also show that words used in the formal documentation represent more the functional and technical (project) management approach, while in Case 3 the focus is on the change goal visualized by the use of the words *'service engineer'* and *'customer.'* Overall, in all three cases the assertives and expressives are used the most and can be related to the understanding phase in the conversations. It seems that assertives are speech acts that are often used by service engineers explaining their professional culture for understanding how things work as in a technical machinery environment.

9.3 Answering the main research question and related sub questions

In this section we will subsequently answer the six subquestions of this study taking the results of the separate cases in Chapters 5, 6 and 7, and the cross case analysis in Chapter 8 into account. Finally, the main research questions will be answered.

1) *What is the organizational and change context of the three cases?*

For answering this question we first address the organizational context, and second the change context. The characteristics of the three different cases varied from a hierarchical, functionally

structured organization (Case 1) towards a more centralized, networked organization structure with tasks integrated in the districts (Case 3) as depicted in Figure 8.2. Case 1 had the most complicated organization structure (i.e., regional spread), whereas Case 3 can be seen as a more compact organization with the different districts and staff departments close together. Case 2 represented an in between situation because of the centralized Technical Department (TD) with management and staff in the same building.

It can be concluded that the organizational structure affects the change result and must be taken into account when a change project is started. The literature we known of does not explicitly mention that the organization structure can be an important factor affecting the interaction processes between participants and in the end the change result. It might be that this is considered to be a very logical and well known aspect, but often forgotten in the organization wide change projects. During the change project it is necessary that change agents are in close contact with the change objects in order to create optimal interactions between all participants in the change process. This implies that change agents have to work locally and becoming 'local with the locals.' The hierarchical organization structure in Case 1 made this 'localization process' complicated, whereas Cases 2 and 3 could benefit from the smaller and more centralized organization structure that was already in place.

The second part of this subquestion focuses on the change context of the three cases. The change processes varied from a strictly planned change approach in Case 1 towards an open en less planned change approach of interactional learning in Case 3. These differences in the change approaches seems to fit with the organizational structure and culture as depicted in Figure 8.2 of the different case organizations.

To conclude and to answer the first subquestion it is manifest that organization and change context do affect the change result.

2) *What is the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants?*

This study proves there is a difference in de PC and PD of service engineers, managers and consultants. Table 8.12 in the previous chapter showed the PC according to the framework of Lang (1993). We can see clear differences in the cultural values of the three professional groups, that are often established during their professional education. The manager is focused on facts, figures and beliefs in the law of economics, while the engineer is basically interested in technology believing in the law of physics. The consultant, not being an expert in some kind of profession (i.e., business economics, information technology or engineering) mostly has an serving role towards the client organization. He is offering his services trying to fulfil the assignment mostly given by management. In that sense most consultants will take a position supporting the organization goals and the management perspective.

The typical discourse of these professionals also differs. The engineer is trying to understand the technical details. The want proof and do not take any answer for granted. The manager has to manoeuvre between requests, promises and directions keeping in mind the overall organizational goals, but also the requirements form his employees. The consultant again wants to facilitate the change process for which he is paid. His goal is to facilitate conversations in the organization and wants to proceed in the change process, and achieving goals of his client. In that sense he mostly follows the management discourse.

3) *Can a difference between Professional Culture (PC) and Professional Discourse (PD) of different professional groups be a cause of resistance to change?*

The analysis of our cases indicate that resistance to change can be a cause when PC and PD of the three professional groups is not aligned. Case 1 appears to give the best example in this respect. It appears to be difficult for different professional groups to develop a shared mental model when not being aware of and sensitive to their own professional discourse and the professional discourses of others. In Case 3 participants were able to overcome these professional differences and create a conversational communication setting with a focus on intergroup relationships. By doing this the dynamics of organizational change might be better understood leading to redefining and resituating the role of resistance to change in change management.

4) *Do cultural context factors, such as the interaction between Organizational Culture (OC) and Professional Culture (PC) affect organizational change?*

The conclusion of subquestion one already mention that organization and change context affects the change result. The PC and PD of the service engineers, managers and consultants are found to be different and affect the cooperation between the interacting actors. Furthermore, these differences in PC and PD can be a cause for resistance to change. It is observed that the already existing discourse differences between the professional groups studied in Case 1 and 2 seems to be amplified due to the contextual factors together with the differences in PC and PD. The nature of this explorative study does not pretend to have shown a direct causal relation between the organization/change context and the change result, but at least it illustrates a relation. It is strongly recommended in future research to take these aspects into account.

5) *Can Discourse Analysis (DA) be useful to understand the organizational change result?*

For this subquestion it can be concluded that for the lexical writing level it is not possible to make a clear statement, since there appeared to be a strong discrepancy between the overt written top and the covert oral bottom of the iceberg. The people organizing the work and change processes are in fact not doing (orally) what they pretend to do in writing (i.e., the formal documents). This implies a kind of split in the organizational change process because words and deeds are not aligned. A similar study of Leclercq-Vandelannoitte (2011) confirms this by using a Foucauldian DA process model approach and found that 'paper is patient' as we say in Dutch. (Top) managers in a large French building company appeared to do something else or were very sceptical about performing what was officially written in strategy documents. But, for the oral syntactic level it can be concluded that the 13 measurement points (five speech acts, two negotiation strategies, two communicative support and four conversation phases) confirm nicely the organizational change success or failure. Case 1 (the Eiffel tower) is a failure; even five years later the Tablet PC of concern still causes difficulties technically. However, during an evaluation session with some of the key players the overall feeling about the change result was positive. Case 2 (the Guided missile) is a partial success, but Case 3 (the Connected island) is a complete success with some nuancing.

6) *Can DA lead to additional insights concerning the interaction between OC and PC as to benefit technical and social innovation (TI and SI)?*

The answer of the sixth subquestion is also a coin with two sides. Yes, there is a complex relation between discourse and power (Hardy and Phillips, 2004) and DA may illustrate that an optimal balance of power and egalitarianism is needed to successfully technically innovate. A preceding social innovation is required for this (Verhoeff, 2011). Cases 1 and 2 evidenced very much transactional leadership with more power distance in the Eiffel tower of Case 1 than in the guided missile setting of Case 2. The PC of the service engineers could become more effective in Case 2 than in Case 1 since the aviation firm worked on an implementation of a technical innovation in a more egalitarian culture using the guided missile structure of the organization. Case 3 indicated a hidden transformational leader who organizes change behind the scenes or underneath in an organic self-assembly of network cells of PCs, which find each other smoothly in an incubator of innovation initiation. Again the other side of the coin shows that an interaction can never be perfect. This makes the prediction of successful change difficult because situations and interactions develop over time. This implies that future steps to be taken in change hardly can be predicted based on past (or best) experiences to learn for the next round of organisational change. It might be better to act upon the situation at hand here and now focussing on next practices instead of looking back hoping that the best practices of the past will still work in the future.

After answering the subquestions we are able to answer the main research question of this study, namely:

What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?

Based on Figure 8.4 in the previous chapter it can be concluded that a consistent professional culture and appurtenant discourse my provoke a clash between the service engineers, managers and consultants affecting the organization change process negatively. This is strengthened in a hierarchical top-down oriented organization structure taking a strictly planned change approach (based on the theoretical planned change perspective). Cooperation in innovative change projects will work out better if professionals are able to cross bridges and listen emphatically to each other in a constructive dialogue in which understanding, performance and closure phases are established. This cannot be done overnight, but requires an trust among all employees, an network or connected organization structure in which the change process develops step by step and participants are open for a dialogical conversation.

Methodological conclusions
Additionally this study shows that working with a qualitative research design using the discourse analysis framework it is possible to find differences in professional culture and discourse of interacting actors during organizational change. The discourse analysis framework is, as far as we know, never empirically used, but seems to be beneficial in understanding the interaction processes and sensemaking among different professionals, which is interesting to further develop our understanding of organizational change.

9.4 Limitations of this study

This study has some limitations with respect to the research design and methodology used. The overall research design had an explorative nature using multiple cases which makes it difficult the generalize and prove causalities between PC, PD and change results. The generalization potential is at the most local, which means that the results apply for each one of the 3 cases at least, and across the 3 cases at the most. We may suggest that the findings might be recognizable in other cases, but obviously we cannot confirm this with our data.

Furthermore the main method of research was linguistic discourse analysis within an organizational change context. The combination of an explorative study and a mainly qualitative, with some quantitative measurement, linguistically analyzed makes it difficult to gain hard objective evidence. However, this study shows that both subjective and objective insights are needed to understand organizational change and the role of professional culture and discourse in the change process. We think that DA can be very beneficial for studying organizational dynamics and find other reasons to explain (un)successful change.

Beside the research design and methodology there are other limitations. First, the discourse analysis was based on transcripts from just a few formal sessions per case (Case 1: a regional kick off meeting, Case 2: a formal diagnostic workshop and an informal conversation afterwards, Case 3: an informal meeting for evaluating the conversation sessions). However, the observed patterns (i.e., participant observations) in these sessions were clearly recognizable in other meetings and informal conversations within all three cases which we observed for almost two years, and hence can be considered as characteristic. Second, the selection of utterances (Case 1: 38 utterances, Case 2: 36 utterances and 12 utterances, Case 3: 36 utterances) in the discourse analysis was somewhat subjective. However, these utterances represented the most crucial turns in the meetings and reflect the overall gist of the discussions we observed in the three cases. Furthermore, a framework for the discourse analysis is defined by the organizational and change context, a lexical analysis and a syntactic analysis. The dataset consists of 96.016 written words and 101.207 (oral) discourse words. In total 112 people were interviewed during 68 interview sessions. Most interviews recorded provided more than 25 hours of text. The speech act analyses is performed on 122 utterances (4.429 words) and attributed to 13 different syntactic measurement points. This can be considered as an adequate representation of the three cases.

In this study we used the multiple-case approach mentioned by Yin (2009) in a diachronic, developmental and evolutionary way. We have used the same methods in all three cases (i.e., a parallel way of working) and in the cross-case analysis (see Chapter 8) describing the three cases in a cumulative manner by taking organizational and change contexts, but also technical and social innovation, as drivers for change, into account as well.

9.5 Discussion, conclusion and possible future studies

On the basis of the linguistic methods used in this study we can say that professional culture and discourse differences can be investigated by discourse analysis that makes plausible or at least

illustrates the success of a technical driven change taking aboard social and communicative factors. Therefore we describe next the theoretical and practical contribution of this study followed by the possible future research.

The theoretical contribution of this study is the combination of change management literature and linguistic literature about professional culture and discourse. In this way we provide an original approach to analyze organizational change projects, also adding to the literature on professional cultures in organizations (e.g., Bloor and Dawson, 1994), by concluding that in interactions between professional groups unarticulated differences in discourse can be related to cooperation and change. Whereas studies about discourse analysis of organizational change have been undertaken mostly from a 'vertical', hierarchical perspective (e.g., Dunford and Jones, 2000; Knights and Willmott, 1992; Brown and Humphreys, 2003; Doolin, 2003; Grant et.al., 2006), this study additionally investigates the horizontal dimension of interaction, involving peer groups. We contribute to the discourse analysis literature concerning change management by analyzing actual speech acts, which is typical of linguistic studies. The methodological contribution of our study lies in the simultaneous use of different discourse measurement tools (Singleton and Straits, 2010; Jick, 1979).

This study might be relevant for the change management literature by showing that professional discourse and culture can be an important aspect to take into account when investigating failure or success factors in change projects. We suggest that being aware of differences in professional discourse styles involves a much deeper level than the suggestion that (change) managers should have a communication plan in order to communicate the change they want to achieve. When talking about 'power to' communication instead of 'power over' communication (Homan, 2005) it is considered important to truly understand professional discourse and culture of the participants involved in the change process.

The practical suggestions derived from this study might be beneficial for managers and consultants because they are usually the initiators and facilitators in change projects and need to be aware of their own professional discourse and culture, how that can affect conversations, interaction and the sensemaking of other participants in the change process. As to the managerial implications of this study, we find that differences in discourse between professional groups should be made explicit and be a constant point of attention in (project) teams. Managers typically think that it is not their role to interfere in the details of change projects. Yet, by adhering to this perspective, managers will use a specific discourse, specific kinds of speech acts and certain negotiation styles, which might not be understood by other professional groups. Thus, an explicit reflection on their own style and its effects on the interaction dynamics could help managers to develop a broader view on the implementation of change and possible resistance on the part of employees, thereby creating more and new options for action.

Another implication for technical and management education at middle and higher levels should include courses about understanding one's own PC and PD and that of other stakeholders in the innovative change process. Furthermore, education should improve cross cooperation or projects, for instance between engineering and business management students, to create awareness about the professional values coming along with social class, occupation and industry as learned at school and in early career (See Hofstede, 2001). In general management should have respect for the

craftsman or technicians. Especially in the Dutch Brainport region[34] with many high-tech companies the demand for technicians in the near future is very high (it is expected that before the year 2020 over 30,000 technicians[35] will be needed in the Brainport region alone).

With regard to future research, we plea that studies on organizational change management should incorporate linguistics and discourse analysis (both lexical and syntactic), as this can result in new perspectives on the causes that change succeeds or fails. Research on organizational change could pay more attention to differences in professional cultures in cross-functional or even virtual teams in order to provide a comprehensive analysis of the situation. All three cases strongly suggest that incorporating linguistic discourse analysis provides a better understanding of inter- and intragroup dynamics and that the organizational change process may be accelerated when the differences in the professional discourse and professional cultures are acknowledged from the very beginning and that in this way problems can be remedied during the implementation program.

For future studies we would like to make a strong plea for organizational DA in favor of innovation change (both technical and social) that uses the available cognitive, psychological and linguistic methods in any combination as well as inductive and deductive, quantitative with some quantification, subjective and objective to the extent possible. Studies are strongly recommended within one national culture, such as the Dutch in this study with OC and PC as variables. Cognitive psychological linguistics, such as the study by Lam (2011) that examines linguistic politeness and trust in student team Emails between individuals taking the lead and those who tend to follow, would be beneficial. This can be seen in the influential theory by Brown and Levinson (1987) and the evaluation by Wilson, Kim and Meiscke (1991) for speech acts as directives, which were so crucial in this study.

As stated above much more psycholinguistic oriented DA is needed to study cultural borders across nations and professions within the culture of organizations and between them. Most of the results of the above mentioned studies show that organizational change can hamper when PC and PD are not explicitly outspoken, as our three cases show. The link between culture and discourse should be established in an intensive way identifying meticulously the different levels of nation, organization, sector and profession.

In order to study PC and PD in relation to organizational change, it is preferable to have longitudinal research projects, executed by professionals getting PhDs at later age as at Open Universities, where lifelong learning takes place in true interface between scientific theory and business practice. The diachronic process in the learning organization over time might warrant a better ecological validity in engaged scholarship, as Van de Ven (2007) suggests and be more relevant than one shot variance studies using multiple regression, as often seen in PhD theses by young students without business experience. Needless to say that combined process and variance model studies are the best to serve generality.

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34 See www.brainport.nl. Brainport is an organization that coordinates the cooperation between business, knowledge- and educational organizations and government according the triple helix concept. This cooperation creates a powerful climate for entrepreneurial activities for both (multi) nationals and small medium enterprises.

35 The "Techniek Pact" (2013) is an agreement between several parties (educational organizations, employers, local and national government) to increase the number of technicians and to improve the connection between education and the labor markets.

The discrepancy between writing and speaking in an organization as confirmed by this DA and that of Leclercq-Vandelannoitte (2011) does not mean that any writing becomes obsolete in a company or is swayed in the issues of the day. We would recommend to firms which go through organizational change to make clear synopses of the process with its struggles, pitfalls and solutions to understand better the interaction dynamics between participants in change projects.

One might wonder why there is such a lack of studies performing discourse analysis. What is not known is not used. It might be helpful to train organization researchers more in the use of cognitive and psycholinguistic methods. When organizational change projects fails, it is because of a mixture of the change context, the organization culture and a possible difference between the professional cultures and discourses of concern which can be easily spotted by localizing communication disorders. Once the problems can be diagnosed, organizational change projects can gain in success by appropriate problem solving. This multiple case study has hopefully indicated that the interaction of professionals with different professional discourses and cultures can have a significant effect on innovative (technical versus social) change management and that this can be evidenced by analyses of lexical, syntactic, negotiation strategy, communication support and conversation phasing aspects. Effective use of a solid OC and PC interaction will be an important means to increase the success of innovation driven organizational change projects.

9.6 What did we learn from this study for the future application?

This study started from a practical point of view; how do different professionals interact and might their professional discourse be an influential factor in an organizational change processes. The theoretical relevance of this study started in the field of change management and by performing discourse analysis we combined linguistics with change management. Now that we have answered the main research question, it is necessary to describe how we might apply this knowledge in concrete practical management settings, in science, and in the intermediate profession of teaching students who apply to a Bachelor or Master of Engineering program for managers in technical business environments.

Science
First, the scientific contribution of this study is related to the opportunity to use DA as a method to understand sensemaking dynamics and group interactions. A recent study by Schwartz et. al., (2013) on language use of Facebook messages showed that it can predict personality traits of the volunteers who also took a standard MBTI personality test. In this study the exploration of language distinguished people by personality, gender, and age. We think that DA is a good method to study inter- and intra-professional cooperation when different professionals are involved. Second, this study showed that Professional Culture is a very influencing factor in group dynamics, and we assume it is more important to take into account than focusing on National Culture or Organizational Culture as an explaining factor for (un)successful change. For science this would mean that future research should focus on PC instead of NC and OC to find out difficulties in (virtual) teamwork. Third, it might be an interesting endeavor to study technical and/ or social innovation success/failure from a linguistic perspective. In innovation processes different professionals often have to work together and bridges must be crossed to create new products, techniques or forms of network organizations. In modern society the traditional organization

organized in functional silos is history. Communities of Practice (CoP), network organizations, virtual teams and other flexible forms of organizing, depending on actuality, requires professionals to cooperate in organic and fluid combinations of knowledge and interests. To study this kind of organization requires a different scientific approach, with state of the art methods and the use of information technology. This might lead to new insights, models and theories that can be taught at school to the next generation of professionals.

Teaching and education
Between the scientific world and the practical (managerial) world is an interface that teaches students scientific models and theories which can help them later in their working careers. Specifically teaching students who are being educated for managerial functions in a technical business environment makes it most relevant to use the findings of this study. The most practical suggestion for universities and educators is to focus on interdisciplinary studies. Most schools are organized around professions (i.e., Engineering, Human Resource Management, Psychology, Economics, Marketing, ICT) which seems to be the best way to find a job in a functionally organized company. Based on this study we may say that the professional cultures and discourses are learned at school and unquestioned assumptions and beliefs are imposed into the 'professional mind.' The main practical advice for education would be that schools and universities would incorporate in their programs the possibility for students to gain insight in their own assumptions and beliefs that are partly created by the professional education.

Practice
The practical contribution of this dissertation might be the increased awareness among professionals about their own professional, and often implicit assumptions. Managers, consultants, and service engineers have to be aware of the group dynamics and the specific role of their own typical professional discourse and culture interaction in that setting. First, the professionals need to understand their own professional assumptions and how that can affect the change process in their organization. Second, they need to develop listening and conversation skills to support dialogical conversations.

Especially managers and consultants should create opportunities for open platforms for constructive dialogues. This requires an attitude in which power to, instead of power over, the people should be a leading principle. The approach of 'reigning from the top' is not the most appropriate approach for managers and consultants when cooperating with (service) engineers in change projects. Nevertheless, they should count their words.

Summary

Change processes in organizations do not always turn out as management desires. In the literature of change theory a lot has been written about this during the last 50 years. Many "gurus" and management consultants regularly discuss the attention points which should be taken into account during change processes. The popular scientific management literature, and nowadays websites too, offer clear check lists with the do's and don'ts clearly indicated. The focus is on creating a sense of urgency, defining clear objectives, communicating an inspirational vision, creating involvement and commitment and clear and effective leadership. There is also attention for a shared organizational culture and the wishes of co-workers should also be taken into account. In spite of this approximately 70% of the change processes are considered to be unsuccessful. Nevertheless, change processes are often innovation driven and expensive. In that situation these failure rates are hard to accept for organizations. Of course this is dependent on whose opinion is asked. Managers or co-workers will probably react differently.

Research question
This research presupposes that there are various factors which influence the success of change processes. These include the manner in which the various professionals in an organization interact within the change processes and how they give meaning to that which they hear and see. Additionally, the specific professional discourses and cultures of the various professionals, organizational structures and the approach to change will determine the eventual outcomes of change processes. It is probable that the professional background of individuals plays an important role in their perception of change outcomes. This perception is often based on speech acts, utterances or visual aspects. In this study we focus on discourse in order to understand change proceses. Starting from this perspective the research combines the insights of linguistic literature with those of change theory. The research question is: What is the role of differences in professional discourse and culture when service engineers, managers and consultants interact in organizational change, and how does this affect the change result?

Target group
The scope of the research is limited to three professional groups: the service engineer, the manager and the consultant. These groups were selected because managers and consultants are frequently involved in change processes and also often initiate them. The service engineer was selected because this professional group is frequently involved with change processes due to technological and social innovations.

Research method
This research was constructed as a qualitative multiple case study using qualitative linguistic analyses. Various methods such as semi-structured interviews and document and discourse analyses were used to delineate the professional cultures, their professional discourses and the interaction processes within the organization and the context of change. The discourse analysis was based on 1) word count of written documents (lexis), and 2) coding of speech acts, negotiation strategies and conversation phases (syntax). This method is used for the three cases and is therefore very important for this study.

Answering the research questions

In this study we asked six subquestions before answering the main research question. First the organizational and change context of the three cases was researched. It can be concluded that the organizational structure affects the change result and must be taken into account when a change project is started. Furthermore it is necessary that change agents are in close contact with the change objects in order to create optimal interactions between all participants in the change process. To conclude it is manifest that organization and change context do affect the change result.

The second subquestion wanted to know what the Professional Culture (PC) and Professional Discourse (PD) of the interacting participants was. This study proves that there is a difference in the PC and PD of service engineers, managers and consultants. The manager is focused on facts, figures and beliefs in the laws of economics, while the service engineer is interested in technology and believes in the laws of physics. The consultant mostly has an serving role towards the client organization and follows the management discourse.

In the third sub question we asked if differences in professional culture and discourse can be a cause of resistance to change. The analysis of the three cases indicates that resistance can occur when PC and PD of the three professional groups is not made explicit and well aligned. The dynamics of organizational change might be better understood leading to redefining and situating the role of resistance to change in change management literature.

The fourth subquestion involves the issue of cultural context factors, such as the interaction between Organization Culture (OC) and Professional Culture (PC) affecting organizational change. This explorative study does not pretend to have shown a direct causal relation between the organization/change context and the change result, but at least it indicates a relationship. It is recommended in future research to take these aspects into account.

The fifth subquestion asked if Discourse Analysis (DA) can be useful to understand the organizational change result. For the lexical writing level it was not possible to make a clear prediction, since there appeared to be a discrepancy between the overt written top and the covert oral bottom of the iceberg. Words and deeds are not aligned. For the oral syntactic level it can be concluded that the DA framework confirms neatly the organizational change success or failure.

In the sixth subquestion we asked if discourse analysis (DA) might give additional insights concerning the interaction between Organizational Culture (OC) and Professional Culture (PC) as to benefit technical and social innovation. The answer is like a coin with two sides. Yes, there is a complex relation between discourse and power and DA may illustrate that an balance of power and egalitarianism is needed to successfully technically innovate. The last case shows that social innovation is an pre-condition as mentioned by Verhoeff (2011). The flip side of the coin shows that an interaction can never be perfect. This makes the prediction of successful change difficult. It might be better to act upon the situation at hand here and now focusing on next practices instead of looking back hoping that the best practices of the past will still work in the future.

Conclusions and recommendations

The research conclusion is that differences between the professional discourses of service engineers, managers and consultants do influence interaction processes and, eventually, the outcomes of change processes. However, the organization and the change context are also crucial to achieving the change outcome. In addition a difference between formal written discourse and informal spoken discourse was observed. In practice the service engineers on the shop floor behave differently to what was intended by the managers in their written documents. It became apparent that language analyses can form an important addition to organizational and management related research.

The theoretical recommendations derived from the research are focused on the further development of discourse analysis in management science by means of which new insights into group dynamics in the practice of management can be developed. In addition, research endeavor could focus more on professional cultures as an important factor in interaction processes and meaning giving. The recommendation is that this cultural level deserves attention in addition to more traditional levels of national and organizational cultures. Within the context of technical and social innovation attention should be given to modern flexible work forms such as communities of practice and collective networks of the self-employed.

The practical recommendations focus on management practice. It is recommended to consciously work on formal and informal cross overs, platforms and integral structures that stimulate inter and intra professional cooperation in often functionally designed organizations. Furthermore, professionals should be aware (or made aware) of their own preconceptions deriving from the professional background or education. The "professional intelligence quotient" should be further developed in addition to the emotional and intelligence quotients (EQ and IQ).

Finally, there is a work to be done for the educational professionals who teach junior professionals the details of professional practice. At schools and universities it is recommended that students also learn about the perspectives and intellectual habitus of other disciplines. Educational institutions which are primarily focused on acquisition of specialist knowledge, especially within the fields of management and engineering, could provide this by bestowing attention within the curriculum on the acquisition of technical and social knowledge. Experiencing and understanding various dynamics can broaden the perspectives of students.

Research limitations

The research has a number of limitations in scope. Firstly, the data derives from three cases. On the basis of a limited data set (interviews, documents, meetings and statements) a picture was formed of the three professional discourses and cultures. In addition participant observation could possibly have introduced an element of researcher bias. However, this study also showed that researchers have enough challenges in the interdisciplinary field of change management, linguistics and professional culture.

Samenvatting (In Dutch)

Verandertrajecten in organisaties verlopen niet altijd even goed als gewenst door het management. In de veranderkundige literatuur is hierover de afgelopen 50 jaar veel geschreven. Vele 'goeroes' en management consultants spreken over aandachtspunten waarmee rekening gehouden moet worden in verandertrajecten. De populairwetenschappelijke managementliteratuur en tegenwoordig ook websites bieden overzichtelijke lijstjes met stappenplannen en *do's en don'ts.* Vaak ligt dan de focus op het creëren van urgentie, het stellen van duidelijke doelen, uitdragen van een aansprekende visie, het creëren van betrokkenheid en draagvlak, duidelijk en krachtig leiderschap. Ook moet er aandacht zijn voor een gedeelde organisatiecultuur en moet rekening gehouden worden met de wensen van medewerkers. Desondanks wordt in ongeveer 70% van de gevallen het verandertraject als onsuccesvol beschouwd. Omdat verandertrajecten vaak gedreven worden door kostbare innovatie komt dit falen hard aan in de organisaties. Uiteraard hangt het af aan wie deze vraag wordt gesteld. Managers of medewerkers zullen hierop verschillend reageren.

Probleemstelling
Dit onderzoek vooronderstelt dat er wellicht andere oorzaken kunnen zijn die het verandersucces beïnvloeden. Hierbij moet gedacht worden aan de wijze waarop verschillende professionals in de organisatie samenwerken aan de verandering, hoe ze betekenis geven aan datgene wat ze horen en zien. Wat is het specifieke taalgebruik van de verschillende professionals en hoe bepalen organisatiestructuren of de veranderaanpak het eindelijke succes van de verandering? Wellicht speelt de professionele achtergrond van de servicemonteur wel een belangrijke rol in de manier waarop de verandering wordt gepercipieerd. Die perceptie gaat vaak via taalhandelingen en/of visuele aspecten. Dit onderzoek richt zich op taal om veranderingen in kaart te brengen. Vanuit deze invalshoek combineert dit onderzoek de linguïstische literatuur met die van de veranderkunde. De centrale vraag in dit onderzoek is: Wat is de rol van verschillen in professioneel taalgebruik en cultuur als servicemonteurs, managers en consultants interacteren in organisatie veranderingen en hoe beïnvloedt dit het veranderresultaat?

Doelgroep
Binnen het onderzoek hebben we ervoor gekozen ons te richten op drie professionele groepen: de servicemonteur, de manager en de consultant. Deze groepen zijn geselecteerd omdat met name managers en consultants veelal bij verandertrajecten zijn betrokken dan wel er de initiatiefnemers van zijn. De servicemonteurs zijn van belang omdat deze professionele groep vanwege technologische en sociale innovaties de laatste jaren in veel verandertrajecten zijn betrokken.

Methode
De studie is opgezet als een exploratieve kwalitatieve *multiple-case* studie met kwantitatieve linguïstische analyses. Diverse methoden, zoals semi gestructureerde interviews, documenten en discourse analyses zijn gebruikt om een beeld te krijgen van de professionele culturen, de professionele discourses en de interactieprocessen binnen de organisatie en verander context. De discourse analyse bestond uit 1) het tellen van woorden in geschreven documenten (lexis), en 2) het coderen van uitspraken met betrekking tot taalhandelingen, onderhandelingsstrategieën en communicatiefasen (syntax). Deze methode is toegepast op de drie cases en daarmee van groot belang voor deze studie.

Beantwoording van de onderzoeksvragen

In deze studie zijn zes deelvragen gesteld om de centrale onderzoeksvraag te kunnen beantwoorden. De eerste deelvraag betreft de organisatie- en verandercontext van de drie cases. De conclusie is dat de organisatiestructuur het veranderresultaat beïnvloedt door de interactieprocessen tussen de verschillende deelnemers. De *change agents* moeten tijdens het verandertraject in direct contact staan met de *change objects* om een optimale interactie tussen alle betrokkenen te bewerkstelligen. Het is duidelijk dat de organisatie- en verandercontext het veranderresultaat beïnvloeden.

De tweede deelvraag gaat over de Professionele Cultuur (PC) en de Professionele Discourse (PD) van de interacterende deelnemers. Deze studie toont aan dat er verschillen zijn tussen PC en PD van de servicemonteurs, managers en consultants. De manager is gericht op feiten en cijfers en gelooft in de economische wetten. De servicemonteur is vooral geïnteresseerd in techniek en de natuurkundige wetten. De consultant heeft meestal een ondersteunende rol naar zijn opdrachtgever toe en volgt daarmee veelal het management discourse.

De derde deelvraag gaat in op het verschil tussen PC en PD van de verschillende professionele groepen en of dit een reden kan zijn voor weerstand tegen verandering. De analyse van de drie cases suggereert dat weerstand tegen verandering inderdaad kan ontstaan als de verschillen in PC en PD tussen de drie professionele groepen niet expliciet gemaakt worden en goed afgestemd zijn. Het begrijpen van dergelijke subtiele dynamieken in de interacties tussen professionals tijdens organisatieverandering zou er toe kunnen leiden dat weerstand tegen verandering anders gedefinieerd en gesitueerd wordt in de veranderkundige literatuur.

De vierde deelvraag behelst de kwestie of contextuele factoren zoals de interactie tussen Organisatie Cultuur (OC) en Professionele Cultuur (PC) de organisatieverandering beïnvloeden. Deze exploratieve studie toont niet direct een causale relatie aan tussen de organisatie- verandercontext en het veranderresultaat. Echter, het vermoeden bestaat dat er wel een relatie is. Het advies is om in toekomstige studies rekening te houden met deze factoren.

De vijfde deelvraag richt zich op de Discourse Analyse (DA) en of deze praktisch bruikbaar is om het veranderresultaat beter te begrijpen. In het geval van de lexicale analyse van geschreven documenten is dit niet duidelijk, omdat er een groot verschil is tussen wat men schrijft *(top down)* en wat men doet *(bottom up)*, veelal in gesproken taal. Woorden en daden zijn niet in overeenstemming. Op basis van de syntactische analyse kunnen we concluderen dat het DA raamwerk, gehanteerd in deze studie, redelijk het veranderresultaat bevestigt.

De zesde deelvraag luidt of DA kan leiden tot additionele inzichten met betrekking tot de interactie tussen OC en PC ten gunste van technische en sociale innovatie? Het antwoord betreft eigenlijk twee zijden van dezelfde munt. Er is een complexe relatie tussen discourse en macht. De discourse analyse illustreert dat er een bepaalde balans moet zijn tussen macht en een mate van gelijkheid tussen de mensen in een organisatie om technische innovaties succesvol in te voeren. De laatste *case* laat bovendien zien dat, zoals Verhoeff (2011) al aantoont, dat SI daarvoor een absolute voorwaarde is. De andere kant van de munt laat zien dat interacties tussen mensen belangrijk zijn, maar die zullen nooit perfect zijn. Dit zorgt ervoor dat het 'voorspellen' van succesvolle verandering moeilijk is. Het zou beter zijn om zich te concentreren op de actuele situatie in plaats van terug te kijken en te hopen dat ervaringen uit het verleden ook toepasbaar zijn in de toekomst.

Conclusies en aanbevelingen

De conclusie van het onderzoek is dat inderdaad professionele discourse verschillen tussen servicemonteurs, managers en consultants van invloed zijn op de interactieprocessen en uiteindelijk ook het veranderresultaat. Echter de organisatie- en verandercontext bepalen ook sterk het veranderresultaat. Tevens is geconstateerd dat er verschillen bestaan tussen de formeel geschreven discourse en de informeel gesproken discourse. In de praktijk doen servicemonteurs wat anders dan wat de managers in hun plannen hebben opgeschreven. Gebleken is dat taalanalyses een belangrijke aanvulling kunnen zijn in organisatie- en management gerelateerd onderzoek.

De theoretische aanbevelingen uit het onderzoek zijn gericht op het verder ontwikkelen van discourse analyses in de managementwetenschappen waardoor nieuwe inzichten kunnen ontstaan over groepsdynamieken in de managementpraktijk. Daarnaast zou de wetenschap zich verder kunnen richten op de professionele culturen als belangrijke factor in interactieprocessen en bij betekenisgeving van de professionals. De aanbeveling is dat dit cultuurniveau aandacht verdient naast de veelal traditionelere niveaus van nationale en/of organisatieculturen. Binnen het kader van technische en sociale innovatie zou aandacht geschonken kunnen worden aan hedendaagse flexibele organisatievormen, zoals *communities of practice* (CoP), netwerken en collectieve ZZP-verbanden. Ten slotte bleek linguïstische analyse een belangrijk middel te zijn om organisatiekundige vraagstukken in kaart te brengen.

De praktische aanbevelingen zijn gericht op de managementpraktijk. Het is aan te bevelen om in de vaak functioneel ingerichte organisaties bewust te werken aan formele en informele cross-overs, platformen en integrale structuren die inter- en intra-professionele samenwerking stimuleren. Tevens dienen professionals zich bewust te zijn (of bewust te worden gemaakt) van hun eigen aannames die voortkomen uit hun eigen professionele achtergrond en/of opleiding en die van partners in het veranderproces. De '*professional cultural intelligence quotiënt*' (CQ), zou naast IQ, EQ en FQ verder ontwikkeld kunnen worden. Toekomstig onderzoek zou meer cases en grotere datasets kunnen omvatten waarbij de onderzoekers en consultants zouden kunnen samenwerken in verschillende organisatorische *settings.*

Tot slot is er een taak weggelegd voor de opleiders die aan jonge aanstaande professionals letterlijk 'de kneepjes van het vak' leren. Op universiteiten en hogescholen is het aan te bevelen om studenten ook buiten hun eigen vakgebied in aanraking te laten komen met andere invalshoeken en gedachten vanuit andere vakgebieden. De veelal specialistisch georganiseerde scholen, met name binnen het engineerings- en managementdomein, kunnen hierin voorzien door in het curriculum aandacht te hebben voor zowel technische als ook sociale kennis. Het ervaren en begrijpen van de verschillende dynamieken kan ervoor zorgen dat de blik van studenten verbreed wordt.

Beperkingen

Het onderzoek kent een aantal beperkingen. In eerste instantie zijn de data gebaseerd op slechts drie *cases*. Op basis van een beperkte dataset (interviews, documenten, bijeenkomsten en uitspraken) is een beeld gevormd van de drie verschillende professionele discoursen en culturen. Daarbij zorgt ook de participatieve observatie mogelijk voor een researcher bias. Echter, de studie geeft ook aan dat er nog genoeg te doen is voor onderzoekers op het grensvlak van veranderkunde, linguïstiek en professionele cultuur.

List of Appendices

A – Case 1: Utterances from the kick-off meeting in region Overijssel
B – Case 1: Coding results per utterance of the regional kick-off meeting
C – Case 2: Utterances from the formal diagnostic workshop
D – Case 2: Coding results per utterance of the formal diagnostic workshop
E – Case 3: Utterances from one informal conversation
F – Case 3: Coding results from one informal conversation
G - Cross case: Detailed overview of the coding across the three cases with TI and SI

Line no.	Function/ role	Utterances in chronological order
1	Service Engineer (1)	But what if I do not have any Internet connection and they have sent an order to me what will happen then? Will I miss this order?
2	Manager (1)	No, if there is a connection later on, then you will still receive this order and all the information is still available.
3	Service Engineer (2)	How do you use the different codes in this system? Are these still the same as we are used to?
4	Manager (1)	Yes, we use the same codes until now. But they [*the project group*] are also talking about new codes for getting more details. I do not know at this moment what will be the coding for all our maintenance work.
5	Service Engineer (3)	Do I also have to work with the different material numbers at this moment?
6	Manager (1)	Yes, but these numbers are already in the system available.
7	Service Engineer (3)	Okay, but does every engineer know these numbers? Or do we have to work with a manual and look them up? This will take a lot of time.
8	Manager (1)	Yes, but you can see these numbers on your Tablet PC. They are there!
9	Manager (2)	… Did some of you already take a look with a colleague to see the application and how it works?
10	Service Engineer (3)	I don't think so, at least I have not had any visitors! (… *laughing* …)
11	Service Engineer (4)	Some of our engineers have difficulties with the Tablet PC and the applications. When they only have a shift once in a six-week period then the routine will take very long.
12	Manager (3)	Yes, this might be an extra problem. But we then have to support them and be aware that they will pick up all the new stuff, perhaps a little bit easier. But at the end they also must work with this system.
13	Service Engineer (4)	I know the direction of this project. They want us to start working from home. If this works well we do not have to come to the office anymore. But I do not think this will work. The way they tell it seems very nice, but I do not think that it will work in that way.
14	Manager (3)	I think the project and new way of working will be very good. Of course the older employees might have some difficulties, but I can help them to get along with the system. For you, the younger ones, it won't be a problem, I think.
15	Consultant (1)	How do you take care that engineers within your region deliver the proper data?

Line no.	Function/ role	Utterances in chronological order
16	Manager (2)	We have said this from the beginning. Already in the training we start to tell the engineers that they were responsible for correct data entry. You have to take care that this will always happen! You have to see that the engineers keep on doing this so they will learn it is a part of their job.
17	Consultant (1)	How much time did you need to get used to work with the system?
18	Service Engineer (3)	That's difficult to say… mmm, we have been testing, next we got the training, and finally we started working in real practice. But it will take some time to learn all the ins and outs of this system. I am now working with it for about two weeks.
19	Consultant (2)	How do you think about this change?
20	Manager (2)	First I want to see things working in practice, after that I will believe it. At first it looks rather good.
21	Service Engineer (5)	I think it will take a lot of extra work for me to administrate all this. This could be a blocking issue for me.
22	Consultant (2)	Can you mention more things that will change for the users?
23	Service Engineer (5)	Oh, many things … [*Consultant: give some examples*]. There are so many things that will change, system-wise …
24	Consultant (1)	Do we want at the end this validation step to disappear in the whole process?
25	Service Engineer (5)	Yes, but the engineer in the back office should always take some action and give his approval. But for instance for an engineer of which he knows he is working good this step is just "a mouse click" and then it is validated. For other engineers who are not working that well we still have to validate.
26	Consultant (1)	So these are the work orders which are to be done. The engineers can pick them random and freely. This is what I call the freedom within responsibility.
27	Service Engineer (6)	OK, what can you do when this order remains in the list? Nobody picks it up and they will not start working on it?
28	Service Engineer (3)	Yes, then I have to dispatch this order out of the list to someone. But I think this is also something that should be discussed in the team. We have a performance target within our team and we realize this together.

Line no.	Function/ role	Utterances in chronological order
29	Consultant (1)	OK, this was our demonstration. It seems logical and of course we know that this will take some time to learn. But we want to ask you to start looking into the system with a colleague. The application is dealt with in your region.
30	Service Engineer (4)	When is the training for our team planned?
31	Consultant (1)	Yes, I have the global schedule at this moment. Together with (… mentions name …) we have to look into the detailed planning for training. I come back to that later, alright?
32	Manager (3)	Yes, I think we have to do some homework in the next month. We need to make appointments about how we are going to work. This is also necessary for the cooperation within the team. Please start working on this, it's important.
33	Consultant (2)	… Thank you. I would like to know what you think about this way of working at this moment. What is your first impression?
34	Service Engineer (5)	Yes I think we have to start working with it. At this moment I can really see what it has to offer me and what kind of problems I will encounter. At first I think it will also give a lot of extra work.
35	Manager (3)	Yes, but I think that this has to do with getting started on the system. Once you know it, it is possible to do more in the same time. But time will tell us. If things are working out well you should have less work with validation. In the end perhaps absolutely no work anymore …
36	Service Engineer (2)	Yes, but this was something I have heard many times. I think that at least one or two employees are quite busy with this. What will they do when this is not necessary anymore?
37	Manager (3)	… I think we should also take a good look at the way engineers fill in the documents at this moment. When this information is alright then you should not have much rework anymore. So in this way we must educate the engineers in the correct way.
38	Service Engineer (2)	… yes I understand …

Appendix B – Case 1: Detailed overview of coding results per utterance of a regional kick-off meeting

No.	Role	Utterances (these utterances are the same as Appendix A)	Assert. Abs	Assert. %	Direct. Abs	Direct. %	Commis. Abs	Commis. %	Express. Abs	Express. %	Declar. Abs	Declar. %	Non-coop (1-21) Abs	Non-coop %	Coop (22-29) Abs	Coop %	General (30-44) Abs	General %	Meta-comm (45-64) Abs	Meta-comm %	Initiative Abs	Initiative %	Understanding Abs	Understanding %	Performance Abs	Performance %	Closure Abs	Closure %
		Percentage scored by 10 coders >>>	**Speech Acts**										**Negotiation style**				**Communicative support**				**Conversation phase**							
1	Service Engineer (1)	But what if I do not have any Internet connection and they have sent an order to me what will happen than? Will I miss this order?	1	10	3	30	0	-	5	50	0	-	5	33	3	20	6	40	1	7	1	10	4	40	2	20	0	-
2	Manager (1)	No, if there is a connection later on, than you will still receive this order and all the information is still available.	1	10	2	20	4	40	0	-	2	20	2	15	3	23	5	38	3	23	0	-	3	30	4	40	1	10
3	Service Engineer (2)	How do you use the different codes in this system? Are these still the same as we are used to?	2	20	5	50	0	-	1	10	1	10	2	13	2	13	11	69	1	6	2	20	4	40	2	20	0	-
4	Manager (1)	Yes, we use the same codes until now. But they (the project group) are also talking about new codes for getting more details. I do not know at this moment what will be the coding for all our maintenance work.	4	40	1	10	2	20	0	-	3	30	3	20	4	27	5	33	3	20	1	10	7	70	0	-	1	10
5	Service Engineer (3)	Do I also have to work with the different material numbers at this moment?	3	30	4	40	0	-	1	10	2	20	2	13	2	13	10	67	1	7	1	10	7	70	0	-	1	10
6	Manager (1)	Yes, but these numbers are already in the system available.	4	40	2	20	2	20	0	-	2	20	1	7	4	29	3	21	6	43	0	-	4	40	3	30	2	20
7	Service Engineer (3)	Okay, but does every engineer know these numbers? Or do we have to work with a manual and look them up? This will take a lot of time.	4	40	1	10	0	-	3	30	1	10	6	38	1	6	8	50	1	6	0	-	7	70	2	20	0	-
8	Manager (1)	Yes, but you can see these numbers on your Tablet PC. They are there!	4	40	1	10	1	10	1	10	2	20	2	20	5	50	2	20	1	10	0	-	5	50	2	20	2	20
9	Manager (2)	....Did some of you already take a look with a colleague to see the application and how it works?	2	20	5	50	0	-	1	10	1	10	1	8	1	8	9	75	1	8	2	20	5	50	2	20	0	-
10	Service Engineer (3)	I don't think so, at least I have not had any visitors! (...laughing...)	4	40	0	-	1	10	3	30	1	10	5	45	3	27	1	9	2	18	0	-	5	50	2	20	2	20
11	Service Engineer (4)	Some of our engineers have difficulties with the Tablet PC and the applications. When they only have a shift once in a six-week period then the routine will take very long.	7	70	0	-	0	-	2	20	0	-	5	45	0	-	4	36	2	18	2	20	3	30	3	30	1	10
12	Manager (3)	Yes, this might be an extra problem. But we then have to support them and be aware that they will pick up all the new stuff, perhaps a little bit easier. But at the end they also must work with this system.	5	50	1	10	1	10	0	-	2	20	3	25	4	33	4	33	1	8	1	10	4	40	4	40	0	-
13	Service Engineer (4)	I know the direction of this project. They want us to start working from home. If this works well we do not have to come to the office anymore. But I do not think this will work. The way they tell it seems very nice, but I do not think that it will work in that way.	5	50	0	-	0	-	3	30	1	10	8	100	0	-	0	-	0	-	1	10	4	40	0	-	2	20
14	Manager (3)	I think the project and new way of working will be very good. Of course the older employees might have some difficulties, but I can help them to get along with the system. For you, the younger ones, it won't be a problem, I think.	6	60	0	-	1	10	0	-	1	10	2	25	2	25	3	38	1	13	1	10	4	40	1	10	1	10

No. of discourse fragment	Role	Utterances (these utterances are the same as Appendix A) Percentage scored by 10 coders >>>	Speech Acts 1) Assertives Abs	%	2) Directives Abs	%	3) Commissives Abs	%	4) Expressives Abs	%	5) Declarations Abs	%	Negotiation style Non-cooperative (1-21) Abs	%	Cooperative (22-29) Abs	%	Communicative support General (30-44) Abs	%	Meta-communicative (45-64) Abs	%	Conversation phase 1) Initiative Abs	%	2) Understanding Abs	%	3) Performance Abs	%	4) Closure Abs	%
15	Consultant (1)	How do you take care that engineers within your region deliver the proper data?	1	10	5	50	0	-	2	20	0	-	0	-	0	-	7	100	0	-	2	20	2	20	3	30	0	-
16	Manager (2)	We have said this from the beginning. Already in the training we start to tell the engineers that they were responsible for correct data entry. You have to take care that this will always happen! You have to see that the engineers keep on doing this so they will learn it is a part of their job.	3	30	0	-	1	10	3	30	0	-	3	43	1	14	2	29	1	14	1	10	0	-	3	30	2	20
17	Consultant (1)	How much time did you need to get used to work with the system?	3	30	4	40	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	1	10	3	30	1	10
18	Service Engineer (3)	That's difficult to say....mmm, we have been testing, next we got the training and finally we started working in real practice. But it will take some time to learn all the ins and outs of this system. I am now working with it for about two weeks.	7	70	0	-	1	10	0	-	0	-	0	-	1	17	0	-	5	83	0	-	3	30	2	20	2	20
19	Consultant (2)	How do you think about this change?	1	10	5	50	0	-	1	10	0	-	0	-	1	14	6	86	0	-	3	30	4	40	0	-	1	10
20	Manager (2)	First I want to see things working in practice, after that I will believe it. At first it looks rather good.	6	60	0	-	1	10	1	10	0	-	1	13	5	63	1	13	1	13	2	20	2	20	2	20	0	-
21	Service Engineer (5)	I think it will take a lot of extra work for me to administrate all this. This could be a blocking issue for me.	2	60	0	-	0	-	2	20	0	-	4	57	0	-	3	43	0	-	1	10	3	30	3	30	0	-
22	Consultant (2)	Can you mention more things that will change for the users?	2	20	5	50	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	4	40	1	10	0	-
23	Service Engineer (5)	Oh, many things....(Project CM: give some examples). There are so many things that will change, system-wise....	5	50	0	-	2	20	0	-	1	10	0	-	3	43	2	29	2	29	1	10	5	50	1	10	0	-
24	Consultant (1)	Do we want at the end this validation step to disappear in the whole process?	4	10	6	60	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	3	30	2	20	0	-
25	Service Engineer (5)	Yes, but the engineer in the back-office should always take some action and give his approval. But for instance for an engineer of which he knows he is working good this step is just " a mouse click" and then it is validated. For other engineers who are not working that well we still have to validate.	4	40	0	-	2	20	0	-	2	20	1	14	4	57	0	-	2	29	0	-	4	40	2	20	1	10
26	Consultant (1)	So these are the work orders which are to be done. The engineers can pick them random and freely. This is what I call the freedom within responsibility.	4	40	0	-	0	-	1	10	1	10	1	11	4	44	0	-	4	44	3	30	3	30	1	10	0	-
27	Service Engineer (6)	Ok, what can you do when this order remains in the list? Nobody picks it up and they will not start working on it?	2	20	2	20	0	-	4	40	0	-	2	29	0	-	5	71	0	-	1	10	3	30	3	30	0	-
28	Service Engineer (3)	Yes, than I have to dispatch this order out of the list to someone. But I think this is also something that should be discussed in the team. We have a performance target within our team and we realize this together.	5	50	0	-	1	10	1	10	1	10	0	-	4	67	0	-	2	33	0	-	5	50	2	20	0	-

Appendix B - (continued) Case 1: Detailed overview of coding results per utterance of a regional kick-off meeting

No. of discourse fragment	Role	Utterances (these utterances are the same as Appendix A) / Percentage scored by 10 coders >>>	Speech Acts										Negotiation style				Communicative support				Conversation phase							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non-cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-64)		1) Initiative		2) Understanding		3) Performance		4) Closure	
			Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
29	Consultant (1)	Ok, this was our demonstration. It seems logical and of course we know that this will take some time to learn. But we want to ask you to start looking into the system with a colleague. The application is dealt with in your region.	2	20	3	30	1	10	0	-	2	20	1	14	1	14	3	43	2	29	1	10	1	10	3	30	2	20
30	Service Engineer (4)	When is the training for our team planned?	1	10	6	60	0	-	1	10	0	-	0	-	0	-	6	86	1	14	3	30	2	20	2	20	0	-
31	Consultant (1)	Yes, I have the global schedule at this moment. Together with (...mentions name...) we have to look into the detailed planning for training. I come back to that later, alright?	2	20	3	30	3	30	0	-	0	-	0	-	4	57	1	14	2	29	2	20	2	20	2	20	1	10
32	Manager (3)	Yes, I think we have to do some homework in the next month. We need to make appointments about how we are going to work. This is also necessary for the cooperation within the team. Please start working on this, it's important.	1	10	4	40	1	10	1	10	1	10	0	-	3	27	4	36	4	36	1	10	0	-	6	60	1	10
33	Consultant (2)	....Thank you. I would like to know what you think about this way of working at this moment. What is your first impression?	3	30	5	50	0	-	0	-	0	-	0	-	2	22	7	78	0	-	3	30	4	40	1	10	0	-
34	Service Engineer (5)	Yes I think we have to start working with it. At this moment I can really see what it has to offer me and what kind of problems I will encounter. At first I think it will also give a lot of extra work.	4	40	0	-	0	-	4	40	0	-	3	30	2	20	2	20	3	30	0	-	4	40	3	30	1	10
35	Manager (3)	Yes, but I think that this has to do with getting started on the system. Once you know it, it is possible to do more in the same time. But time will tell us. If things are working out well you should have less work with validation. In the end perhaps absolutely no work anymore....	3	30	1	10	1	10	2	20	0	-	1	9	5	45	4	36	1	9	0	-	5	50	1	10	2	20
36	Service Engineer (2)	Yes, but this was something I have heard many times. I think that at least one or two employees are quite busy with this. What will they do when this is not necessary anymore?	1	10	2	20	0	-	5	50	0	-	7	78	0	-	2	22	0	-	1	10	6	60	1	10	0	-
37	Manager (3)	....I think we should also take a good look at the way engineers fill in the documents at this moment. When this information is alright then you should not have much rework anymore. So in this way we must educate the engineers in the correct way.	2	20	3	30	2	20	0	-	1	10	0	-	3	38	2	25	3	38	0	-	3	30	4	40	1	10
38	Service Engineer (2)	.....yes I understand.....	2	20	0	-	2	20	2	20	0	-	1	8	7	58	1	8	3	25	0	-	4	40	1	10	3	30

Appendix C – Case 2: Utterances from the Formal Diagnostic Workshop with Managers

Line No.	Function/ Role	Utterances
1	Manager of Aircraft Maintenance	Do not make it too complicated. In my opinion, we should be aware of the extra administrative workload for the technicians. If they have to do more work they will have less time to do maintenance.
2	General Project Manager	This is something you keep on saying. I think it is your job to show the technicians they are crucial in this project. The aircraft maintenance department has the most employees and they will have to work with the system.
3	Manager of Purchasing & Logistics	By the way, why is our Technical Department manager not in this workshop? It is important for him to hear this discussion.
4	Consultant	I agree, but he has some other important meetings that were already planned. I think we can also speak for him, you know him all very well.
5	Manager of Engineering	Should we also ask our Information Technology specialist to join us? I think he might be very helpful in some discussions.
6	Consultant	No, this workshop is meant to see who are the most influential people; you, think about this change project. We will not go in details about the system.
7	Project Manager Business	Well I know also a lot of details about TRAX, so if we come to that point both [*General Project Manager*] and I can give answers.
8	Manager of Engineering	OK, let's start. We all know this change is absolutely necessary. There is no other option. We all know that!
9	Manager of Aircraft Maintenance	Yes but we also know that there is a group of employees within Aircraft Maintenance that are absolutely not used to work with ICT tools. They are also not used in working with the current application and always use detailed manuals in their work. This group is about 20 employees and in particular older in age.
10	Manager of Engineering	OK, that is only a small group. The TRAX system is of great importance for further development and the existence of the Technical Department. There is no discussion about that. With this system we can make a real big step. The investment should secure our continuity.
11	General Project Manager	We started the implementation of TRAX because the old system will no longer be serviced by the supplier. Using it longer would increase the risk of system failures and would be irresponsible
12	Manager of Engineering	The CEO might ask us the question, "What are the savings within the Technical Department now we have implemented TRAX?"

Line No.	Function/ Role	Utterances
13	General Project Manager	Well, these savings (estimated) are described in the Project Initiation Document (PID). There is a business case with potential savings. I am more concerned about the involvement of the management in general. I try to do this as much as possible.
14	Manager of Purchasing & Logistics	We all know the employees that are skeptical about this change project. However, there are also employees that see the benefits. We should focus on them.
15	Consultant	Ok, this might be a good moment to investigate which employees are positive and which ones are more negative. I suggest we should focus on several clusters within the organization first, and then consider those people that are positive/negative about the change. We can put these on the flip chart. [*the groups starts a short discussion about the possible clusters*]
16	Consultant	Alright, after this discussion I think we get five clusters; 1) Office, 2) Project, 3) Information Technology, 4) Aircraft Maintenance and 5) MT Technical Department. Do you all agree?
17	Manager of Engineering	Well, I know three employees [*mentions names*] of whom two are really positive, as they see changes in the future work processes. But the other one is very critical. He has a 'not invented by me' mentality and does not believe in the new system because he is not involved. However, their impact is not very big on this project.
18	Manager of Purchasing & Logistics	I have also two employees in my department. Both are skeptical. They first have to see the results, and then they will believe it. They take nothing for granted but their impact on this project is also not very big.
19	Manager of Aircraft Maintenance	I think there are two employees in the Manpower department that are suspicious about the change. One of them also questions the role of the organization in this project. I think they are neutral about this change and they haven't got really much influence.
20	Consultant	Ok, thanks! Let's take a closer look at different persons in the change project. So this is about your people sitting at this table. [*participants starts laughing and discussing about their own roles*]
21	General Project Manager	Well, my impact is of course very big! I am positive about this change and I am responsible for timely delivery, with a high quality and user acceptance of the system.
22	Project Manager Business	For me, it is important that the business will accept the new system. I have some influence on this, however, when the system works according the user specifications it will be accepted by the users. I have some impact on that.

Line No.	Function/ Role	Utterances
23	Project Manager Business	We have also selected the super users on their positive attitude. Their influence on, and involvement with the new system is big. But they are all positive and expect great things from TRAX.
24	General Project Manager	What do you think about the project members concerned with Information Technology? Of course they are facilitating in this project but their impact on a successful system is big. After all, they are positive about the change.
25	Consultant	Let's take a closer look at the Information Technology Department. What do they think about this change? What is your impression?
26	General Project Manager	I think both the Manager's Operations ICT and Information Management are positive. Manager of Operations is concerned about 'keeping the system up and running'. The manager of Information Management will be responsible for the further development of TRAX. She has to organize the IT support.
27	Manager Aircraft Maintenance	I think it is well known that some of my employees are very negative about everything. This has to do with the reorganization last year. Some are very clear about their situation: 'first you [*Manager Aircraft Maintenance*] reorganize my job, and then you ask me to do more administration'. Another employee states 'you have messed up my last three years here'. And of course we have one employee who is always against everything. The impact of these employees on this project is not that big. However, we have to keep this in our mind during the roll out phase.
28	General Project Manager	And how about the team managers within your department?
29	Manager of Aircraft Maintenance	Well, I do not know. Of course their impact is big on this project. They have to support the project and talk positive about it in their team. But I do not know what their interest might be in this project. They are positive about the change.
30	Manager of Aircraft Maintenance	And we have a lot of service engineers that talk the same story of others; 'first we have to see and then we believe in it'. Other employees think METALS [*the old system*] is very bad. This new system cannot be that bad. However, they are skeptical about the user interface and the effort a user has to spend by using the new system in their work.
31	Project Manager Business	Ok, but we have also very positive employees. They think every change is fun and most of the young employees are very open-minded to TRAX. These employees are also members of the Super User group.

Line No.	Function/ Role	Utterances
32	Consultant	Well, we have talked a lot about other employees. Now I want to take a closer look at the people in the Management Team of the Maintenance Department. So, it is about your role in this project.
33	Manager of Aircraft Maintenance	I think TRAX will give us more and better management information. With this we can organize better maintenance in a controlled way. I am positive, but also a little bit skeptical. I do not want that my people have to do more administration. That might be a problem with this system.
34	Manager of Engineering	Well I am really very positive about TRAX. I am a senior user and member of the project board. My interest in a successful implementation is very big. I think it is about time we will have some stability in the organization. But I will tell everybody the necessity of this system for our Technical Department.
35	Manager Purchasing & Logistics	I agree with my colleague. I also tell everybody about the necessity of TRAX. I am positive despite the implementation of the system that it will have some impact within my department.
36	General Project Manager	Yes, unfortunately our manager of the Technical Department is not available. He is of course our principal. His goal is to achieve an optimal maintenance process and higher efficiency. However, he does not speak 'the language'. He is just in and is boarding on a fast train. I think his impact is big and he is positive about TRAX.

Case 2: Utterances of the informal conversation after the formal diagnostic workshop

Line No.	Function/ Role	Utterances
1	General Project Manager	Well, after this formal meeting I think it is good to tell you *[the consultants]* a little bit more about the history, just before this project started.
2	General Project Manager	In April 2008, a reorganization took place within the Aircraft Maintenance Department. The maintenance teams were isolated teams and it was difficult to get insight into how they were working. Also the performance was quite different per team.
3	Project Manager Business	Sometimes we scheduled maintenance at different hours just because we knew that a specific team was on shift. We knew they would not deliver a good job.
4	General Project Manager	Yes, and the manager of the maintenance department agreed to this situation. He found there was no need to change this.

Line No.	Function/ Role	Utterances
5	Consultant	OK, I understand. Did he want to keep the situation stable?
6	General Project Manager	Yes, but the manager Technical Department came in and he made a plan to change this situation. His goal was to separate management and operational tasks. He wanted more 'control' and transparency in the maintenance processes. He also wanted to break up the strict social structure in the teams.
7	Project Manager Business	For our manager of Aircraft Maintenance this was a very bad project. It resulted in very negative reactions of his employees on the plan. Also the relationship between the Manager of the Technical Department and the Manager of Aircraft Maintenance got worse. But also the relationship between some of the employees and the Manager of Aircraft Maintenance got very bad.
8	General Project Manager	These employees saw their manager as the 'bad messenger' who ruined the last years of their careers.
9	Project Manager Business	After this reorganization the old team leaders are replaced by three new and younger team leaders. A new role of operational coordinator was created for these employees, but this is seen as demoting.
10	General Project Manager	Those degraded team leaders are very angry at 'their Manager of Aircraft Maintenance'. They think he is responsible for all of this
11	Consultant	Well, now I can understand the difficult relationship between the Manager Technical Department and the Manager Aircraft Maintenance.
12	General Project Manager	Well, this is just informal information, but I think it is good to know this.

Appendix D – Case 2: Detailed overview of coding results per utterance of the formal diagnostic workshop

No. of discourse fragment	Role	Utterances of the formal diagnostic workshop (these utterances are the same as Appendix C)	Speech Acts 1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Negotiation strategy Non-cooperative (1-21)		Cooperative (22-29)		Communicative support General (30-44)		Meta-communicative (45-64)		Conversation phase 1) Initiative		2) Understanding		3) Performance		4) Closure	
1	Mgr AM	Do not make it to complicated. In my opinion we should be aware of the extra administrative workload for the technicians. If they have to do more work they will have less time to do maintenance.	3	50	0	0	2	33	1	17	0	0	1	17	1	17	4	67	0	0	4	67	1	17	1	17	0	0
2	PL General	This is something you keep on saying. I think it is your job to show the technicians they are crucial in this project. The aircraft maintenance department has the most employees and they will have to work with the system.	3	50	1	17	2	33	0	0	0	0	3	50	0	0	1	17	2	33	2	33	2	33	2	33	0	0
3	Mgr P&L	By the way, why is our manager Technical Department not in this workshop? It is important for him to hear this discussion.	2	33	2	33	0	0	2	33	0	0	1	17	0	0	3	50	2	33	4	67	2	33	0	0	0	0
4	Consultant	I agree, but he some other important meetings that were already planned. I think we can also speak for him, you know him all very well.	1	17	1	17	3	50	0	0	1	17	1	17	0	0	0	0	2	33	2	33	3	50	0	0	1	17
5	Mgr Eng	Should we also ask our Information Technology specialist to join us? I think he might be very helpful in some discussions.	0	0	5	83	0	0	1	17	0	0	0	0	1	17	2	33	3	50	5	83	1	17	0	0	0	0
6	Consultant	No, this workshop is mend to see how the most influencing people; you, think about this change project. We will not go in details about the system.	2	33	1	17	0	0	0	0	3	50	2	33	1	17	1	17	2	33	0	0	1	17	2	33	3	50
7	PL Business	Well I know also a lot of details about TRAX, so if we come to that point both [PL General] and I can give answers.	1	17	0	0	3	50	0	0	2	33	1	17	3	50	2	33	0	0	1	17	3	50	1	17	1	17
8	Mgr Eng	Ok let's start. We all know this change is absolutely necessary. There is no other option. We all know that!	1	17	1	17	0	0	3	50	1	17	0	0	4	67	1	17	1	17	3	50	2	33	0	0	1	17
9	Mgr AM	Yes but we also know that there is a group of employees within Aircraft Maintenance that are absolutely not used to work with ICT tools. They are also not used in working with the current application and always use detailed manuals in their work. This group is about 20 employees and in particular older in age.	3	50	1	17	0	0	2	33	0	0	2	33	2	33	2	33	0	0	0	0	6	100	0	0	0	0
10	Mgr Eng	Ok, that is only a small group. The TRAX system is of great importance for further development and existance of the Technical Department. There is no discussion about that. With this system we can make a real big step. The investment should secure our continuity.	4	67	1	17	1	17	0	0	0	0	1	17	2	33	1	17	2	33	0	0	2	33	3	50	1	17
11	PL General	We started the implementation of TRAX because the old system will not longer be serviced by the supplier. Using it longer would increase the risk on system failures and would be irresponsible	4	67	1	17	0	0	1	17	0	0	1	17	0	0	3	50	2	33	1	17	3	50	1	17	1	17

Appendix D – (continued) Case 2: Detailed overview of coding results per utterance of the formal diagnostic workshop

No. of discourse fragment	Role	Utterances of the formal diagnostic workshop (these utterances are the same as Appendix C)	Speech Acts										Negotiation strategy				Communicative support				Conversation phase							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non-cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-64)		1) Initiative		2) Understanding		3) Performance		4) Closure	
12	Mgr Eng	The CEO might ask us the question; what are the savings within the Technical Department now we have implemented TRAX?	2	33	1	17	0	0	2	33	1	17	0	0	0	0	4	67	2	33	0	0	1	17	5	83	0	0
13	PL Overall	Well these savings (estimated) are described in the Project Initiation Document (PID). There is a business case with potential savings. I am more concerned about the involvement of the management in general. I try to do this as much as possible.	3	50	0	0	1	17	2	33	0	0	0	0	1	17	1	17	4	67	1	17	2	33	0	0	3	50
14	Mgr P&L	We all know the employees that are skeptical about this change project. However there are also employees that see the benefits. We should focus on them.	2	33	1	17	1	17	2	33	0	0	0	0	3	50	1	17	2	33	3	50	0	0	1	17	2	33
15	Consultant	Ok, this might be a good moment to investigate which employees are positive and who are the more negative ones. I suggest we should focus on several clusters within the organization first and than consider people that are positive / negative about the change. We can put these on the flip chart. *[the groups starts a short dicussion about the possible clusters]*	0	0	3	50	2	33	0	0	1	17	0	0	0	0	4	67	2	33	4	67	0	0	2	33	0	0
16	Consultant	Alright, after this discussion I think we get five clusters: 1) Office, 2) Project, 3) Information Technology, 4) Aircraft Maintenance and 5) MT Technical Department. Do you all agree?	2	33	2	33	0	0	0	0	2	33	0	0	0	0	3	50	3	50	2	33	0	0	3	50	1	17
17	Mgr Eng	Well I know three employees [mentions names] of which two are really positive, they see changes in the future work processes. But the other one is very critical. He has a 'not invented by me' mentality and does not believe in the new system because he is not involved. However, their impact is not very big on this project.	5	83	0	0	0	0	0	0	1	17	0	0	2	33	2	33	2	33	0	0	6	100	0	0	0	0
18	Mgr P&L	I have also two employees in my department. Both are skeptical. They first have to see the results and than they will believe it. They take nothing for granted but their impact on this project is also not very big.	5	83	0	0	0	0	1	17	0	0	0	0	2	33	2	33	2	33	0	0	6	100	0	0	0	0
19	Mgr AM	I think there are two employees on the Manpower department that are suspicious about the change. One of them also questions the role of the organization in this project. I think they are neutral about this change an have not really much influence	5	83	1	17	0	0	0	0	0	0	0	0	2	33	1	17	3	50	0	0	6	100	0	0	0	0
20	Consultant	Ok, thanks! Let's take a closer look at different persons in the change project. So this is about you people sitting on this table. *[participants starts laughing and discussing about there own roles]*	0	0	4	67	0	0	0	0	2	33	0	0	0	0	1	17	5	83	2	33	0	0	2	33	2	33

Appendix D – (continued) Case 2: Detailed overview of coding results per utterance of the formal diagnostic workshop

No. of discourse fragment	Role	Utterances of the formal diagnostic workshop (these utterances are the same as Appendix C)	Speech Acts										Negotiation strategy				Communicative support				Conversation phase							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non-cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-64)		1) Initiative		2) Understanding		3) Performance		4) Closure	
21	PL Overall	Well, my impact is of course very big! I am positive about this change and I am responsible for timely delivery, with a high quality and user acceptance of the system.	3	50	0	0	1	17	2	33	0	0	1	17	3	50	0	0	2	33	0	0	4	67	1	17	1	17
22	PL Business	For me it is important that the business will accept the new system. I have some influence on this, however when the system works according the user specifications it will be accepted by the users. I have some impact on that.	4	67	0	0	2	33	0	0	0	0	0	0	3	50	1	17	2	33	0	0	4	67	2	33	0	0
23	PL Business	We have also selected the super users on their positive attitude. Their influence on, and involvement with the new system is big. But they are all positive and expect great things from TRAX.	5	83	0	0	0	0	1	17	0	0	1	17	2	33	1	17	2	33	0	0	4	67	2	33	0	0
24	PL Overall	What do you think about the project members concerned with Information Technology? Ofcourse they are facilitating in this project but their impact on a succeful system is big. After all they are positive about the change.	2	33	0	0	0	0	4	67	0	0	0	0	0	0	6	100	0	0	5	83	1	17	0	0	0	0
25	Consultant	Let's take a closer look at the Information Technology Department. What do they think about this change? What is your impression?	1	17	4	67	0	0	0	0	1	17	0	0	1	17	3	50	2	33	5	83	1	17	0	0	0	0
26	PL Overall	I think both the Manager's Operations ICT and Information Management are positive. Manager Operations is concerend about 'keeping the system up and running'. The manager Information Management will be responsible for further development of TRAX. She has to organize the IT support.	3	50	0	0	1	17	2	33	0	0	0	0	1	17	1	17	4	67	0	0	4	67	0	0	2	33
27	Mgr AM	I think it is well known that some of my employees are very negative about everything. This has to do with the reorganization last year. Some are very clear about their situation: 'first you [Mgr AM] reorganize my job and than you ask me to do more administration'. Another states 'you have messed up my last three years here'. And of course we have one employee who is always against everthing. The impact of these employees on this project is not that big. However, we have to keep this in our mind during the roll out phase.	3	50	0	0	0	0	3	50	0	0	3	50	1	17	1	17	1	17	0	0	6	100	0	0	0	0
28	PL Overall	An how about the team managers within your department?	1	17	3	50	2	33	0	0	0	0	0	0	0	0	6	100	0	0	3	50	1	17	2	33	0	0
29	Mgr AM	Well I do not know. Of course their impact is big on this project. They have to support the project and talk positive about it in their team. But I do not know what their interest might be in this project. They are positive about the change.	2	33	0	0	1	17	2	33	1	17	0	0	1	17	3	50	2	33	1	17	5	83	0	0	0	0
30	Mgr AM	And we have a lot of technicians that talk the same story of others; 'first we have to see and then we believe in it'. Other employees think METALS [the old system] is very bad. This new system can not be that bad. However they are skeptical about the user interface and the effort a user has to afford by using the new system in their work.	3	50	0	0	0	0	2	33	1	17	2	33	0	0	2	33	2	33	0	0	5	83	0	0	0	0

Appendix D – (continued) Case 2: Detailed overview of coding results per utterance of the formal diagnostic workshop

No. of discourse fragment	Role	Utterances of the formal diagnostic workshop (these utterances are the same as Appendix C)	Speech Acts										Negotiation strategy				Communicative support				Conversation phase							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non-cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-64)		1) Initiative		2) Understanding		3) Performance		4) Closure	
31	PL Business	Ok, but we have also very positive employees. They think every change is fun and most of the young employees are very open minded to TRAX. These employees are also members of the Super User group.	5	83	0	0	0	0	0	0	1	17	1	17	1	17	1	17	2	33	2	33	4	67	0	0	0	0
32	Consultant	Well we have talked a lot about other employees. Now I want to take a closer look on the people in the Management Team of the Maintenace Department. So, it is about your role in this project.	1	17	3	50	1	17	0	0	1	17	0	0	0	0	1	17	5	83	1	17	1	17	0	0	4	67
33	Mgr AM	I think TRAX will give us more and better management information. With this we can organize better maintenance in a controlled way. I am positive but also a little bit skeptical. I do not want that my people have to do more administration. That might be a problem with this system.	2	33	1	17	0	0	3	50	0	0	0	0	1	17	4	67	1	17	1	17	3	50	2	33	0	0
34	Mgr Eng	Well I am really very positive about TRAX. I am a senior user and member of the project baord. My interest in a succeful implementation is very big. I think it is about time we will have some stability in the organization. But I will tell everybody the necessity of this system for our Technical Department	3	50	0	0	0	0	2	33	1	17	0	0	3	50	1	17	2	33	1	17	2	33	3	50	0	0
35	Mgr P&L	I agree with my collegae. I also tell everybody about the necessity of TRAX. I am positive despite the implementation of the system will have some impact within my department.	3	50	1	17	1	17	1	17	0	0	0	0	4	67	1	17	1	17	1	17	3	50	2	33	0	0
36	PL Overall	Yes, unfortunatly our manager Technical Department is not available. He of course is our principal. His goal is to achieve an optimal maintenance process and higher efficiency. However, he does not speak 'the language'. He is just in and is bording on a fast train. I think his impact is big and he is positive about TRAX	2	33	1	17	0	0	2	33	1	17	2	33	1	17	2	33	1	17	1	17	3	50	1	17	1	17

Appendix D – Case 2: Detailed overview of coding results per utterance of an informal conversation

No.	Role	Utterances of the formal diagnostic workshop (these utterances are the same as Appendix C)	Speech Acts 1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Negotiation strategy Non-cooperative (1-21)		Cooperative (22-29)		Communicative support General (30-44)		Meta-communicative (45-64)		Conversation phase 1) Initiative		2) Understanding		3) Performance		4) Closure	
1a	PL Overall	Well after this formal meeting I think it is good to tell you *[the consultants]* a little bit more about the history, just before this project started.	1	17	1	17	1	17	1	17	2	33	0	0	2	33	1	17	3	50	5	83	0	0	1	17	0	0
2a	PL Overall	In April 2008 a reorganization started within the Aircraft Maintenance Department. The maintenance teams were isolated teams and it was difficult to get insight on how they were working. Also the performance was quite different per team.	4	67	1	17	0	0	0	0	1	17	0	0	2	33	1	17	3	50	5	83	0	0	1	17	0	0
3a	PL Business	Sometimes we sheduled maintenance at different hours just because we knew that a specific team was on shift. We knew they would not deliver a good job.	5	83	1	17	0	0	0	0	0	0	2	33	1	17	1	17	2	33	1	17	3	50	1	17	1	17
4a	PL Overall	Yes, and the manager of the maintenance department agreed on this situation. He found there was no need to change this.	3	50	0	0	0	0	3	50	0	0	1	17	2	33	0	0	3	50	0	0	5	83	0	0	1	17
5a	Consultant	OK, I understand. Did he want to keep the situation stable?	0	0	4	67	2	33	0	0	0	0	0	0	0	0	6	100	0	0	4	67	1	17	1	17	0	0
6a	PL Overall	Yes, but the manager Technical Department came in and made a plan to change this situation. His goal was to separate management and operational tasks. He wanted more 'control' and transparency in the maintenance procesess. He also wanted to break up the strict social structure in the teams.	3	50	1	17	0	0	1	17	1	17	1	17	2	33	2	33	1	17	1	17	4	67	0	0	1	17
7a	PL Business	For our manager Aircraft Maintenance this was a very bad project. It resulted in very negative reactions of his employees on the plan. Also the relationship between the Manager Technical Department and Manager Aircraft Maintenance got worse. But also the relationship between some of the employees and the Manager Aircraft Maintance got very bad.	5	83	0	0	0	0	1	17	0	0	2	33	0	0	2	33	2	33	1	17	5	83	0	0	0	0
8a	PL Overall	These employees saw their manager as the 'bad messenger' who ruined the last years of their careers	5	83	0	0	0	0	1	17	0	0	2	33	0	0	1	17	3	50	0	0	4	67	2	33	0	0
9a	PL Business	After this reorganization the old team leaders are replaced by three new and younger teamleaders. A new role of operational coordinator was created for these employees, but this is seen as a degrade.	3	50	0	0	0	0	0	0	3	50	2	33	1	17	1	17	2	33	0	0	5	83	1	17	0	0
10a	PL Overall	Those degraded team leaders are very angry on 'their Manager Aircraft Maintenance'. They think he is responsible for all of this	4	67	0	0	0	0	1	17	1	17	2	33	1	17	1	17	3	50	0	0	5	83	1	17	0	0
11a	Consultant	Well, now I can understand the difficult relation between the Manager Technical Department and the Manager Aircraft Maintenance.	2	33	0	0	0	0	2	33	2	33	0	0	3	50	1	17	2	33	0	0	4	67	2	33	0	0
12a	PL Overall	Well, this is just informal information but I think it is good to know this.	4	67	0	0	1	17	0	0	1	17	0	0	1	17	0	0	5	83	0	0	1	17	1	17	4	67

Appendix E – Case 3: Utterances from the informal conversation held between the service engineers and a district coordinator

Line No.	Function/ role	Speech acts
1	Service Engineer (1)	I think it would be interesting to sit together regularly, just with the service engineers. Just talking with each other how things are going. This does not mean we have to make rules and regulations, but I want to hear things; how others are thinking about certain issues, that would be interesting.
2	Service Engineer (2)	I am missing that at the moment…. I don't know how that is with you, but we did that at SWS [*another housing association before the merger*] earlier with all service engineers …. then we sat with the whole group for about one and a half hours or every month with the whole group together. And then we also revealed that all of us worked in a different way, but you cannot get everyone on one line, not 20 employees. They will always work in a different way.
3	Service Engineer (1)	When I remember these sessions and the moments I attended them, then I think that many service engineers had a lot of questions but they did not ask anything. The reactions on questions or certain situations are very marginal. I think that the service engineers do not react and that might be typical for this group. When there is no attention for this kind of lack in reactions and participation, then everybody keeps on doing his/her own thing and all these interactive sessions are useless.
4	Service Engineer (2)	[*Researcher: but was there enough time for these questions and answers to explore this sufficiently?*] I think that…it was all in a rush and it all had to be settled within a certain time, but I think, if you really would have had certain questions that are important it is possible to answer them and discuss the situation. At least these questions could have been written down somewhere to keep in mind. Personally, I feel that this was not realized in the sessions.
5	Service Engineer (1)	When I remember the last session which I attended, and I see that man again...that man who played for tenant....like a kind of actor in a role play. There was absolutely no reaction at all.
6	Service Engineer (1)	I deliberately kept quiet. I agreed with [*mentions name*] that we would actually say nothing, but of course, finally we could not do that anymore.
7	Service Engineer (1)	[*Researcher: Is this something new for the people?*] Yes, I think that many of them have a certain fear of the situation. They just do not want to show their colleagues that they actually do not know how to handle the situation. Perhaps they know what to do, but some colleagues might do it differently.

Line No.	Function/ role	Speech acts
8	District Coordinator	OK, but is there a lot of uncertainty amongst the service managers at this moment? Do they really think that they are not doing the right thing in the right way?
9	Service Engineer (1)	Well, a lot has happened for the service managers. I think, the biggest mistake ever made in our situation ...well, I might be alone in thinking this, but the mistake is that they [*management*] thought that our technical background is not important anymore in our jobs.
10	District Coordinator	Yes, but do you remember the reaction of our manager of Housing [*mentions name*]. He also heard this reaction, that a technical background and knowledge should be less important. But in fact they never said that in that way!
11	Service Engineer (2)	Yes, but when we have to make a text for a vacancy and we ask whether or not the new employee must have technical skills; does it have to be? Then very clearly everybody says no! That it is not necessary.
12	District Coordinator	Yes, without exactly describing how this technical knowledge would look like, it became clear that the service engineers need some technical background. Yes, that is for certain, he needs that.
13	District Coordinator	What I still remember before these sessions started is the fact that we, district coordinators together with the service engineers, gave advice about the content of the sessions and the people that presented interesting topics. Because people are invited to tell something, and that has to be interesting for the audience, we as coordinators and service managers, and it is important to take a part in the discussions. Some of us have been doing that of course, but some others really did not say very much, and that is not very useful. I think there is much more beneath the water level and that this did not come to the surface during the sessions.
14	Service Engineer (1)	Yes, that is for sure!
15	District Coordinator	But it is also possible that something is asked in the group. When a new colleague just does not know what it is all about...for example the presentation about 'improvement' [*presented by the district managers*]...I can imagine that nobody really understood what was said. And when I see and hear what the group of service engineers is asking about that presentation....then I really think that you missed the message.

Line No.	Function/ role	Speech acts
16	Service Engineer (1)	Yes, that is what I said. These conversation sessions were really good, nothing against them. But our district coordinators must keep a firm grip on this, so that everything has a follow up. When you do not keep control of this then everybody will go on with his/her job as usual and we will have spent hours talking with each other for nothing, it was all useless.
17	District Coordinator	In some way I agree with that, but I still question why this is only something the coordinators should keep in control?
18	Service Engineer (1)	Because it is their role to coordinate everything!
19	Service Engineer (2)	You [*means district coordinator*] have regular meetings with other coordinators of the other districts. During this meeting is there never a moment that you talk about the service engineers, their jobs and what they are doing?
20	District Coordinator	Yes, of course. Also based on these sessions we talked twice about what we see...what is happening in the group of service engineers? Also when we talked about these 'improvements', what is different in the way service engineers acted before and what they do now. I know that there are thoughts to try to have the service engineers work in a more similar way, of course with respect to their own insights, because you won't get everybody on the same line.
21	District Coordinator	But now to be very practical, are you really doing things differently than before?
22	Service Engineer (1)	No, but I have not heard anything new during these training sessions. All the topics discussed until now are not new to me, at least as far as I see it...what I did differently then, let me say it in that way.
23	Service Engineer (2)	…first I did not have that much cost awareness, but the direction is now clear. However, when I renovate a house at a lower cost then I notice that our customer manager is not very pleased…he tells me that he cannot ask enough rent for this house!
24	Service Engineer (1)	…but I think that also our customer managers need to understand why we are working in that way. He must be able to explain that to the tenant. That is something that is not happening very much, I think.
25	Service Engineer (1)	…we also have houses that are 100 years old. Those houses cannot be improved for a small budget! Leave them empty without tenants is also impossible. So at this moment we are looking for possibilities to renovate these houses completely or even demolish these houses. But these discussions are rather new for me!

Line No.	Function/ role	Speech acts
26	District Coordinator	Yes, I do recognize that. I also heard that they said; the service engineers are just doing 'improvement', and they keep on doing that. Then I said, but are they ever told about the high expenses that go with those 'improvements'? And then it seems to be that these cost and expenses are never discussed with the service engineers.
27	Researcher	OK, let's look a little bit into the future. When you would like to have a follow-up program, how would that look for you?
28	Service Engineer (1)	I would like to hear how all service engineers respond when they talked with you...you [*the researcher*] alone with that group, a strange person, not a coordinator or manager. Then see how everybody reacts. I think there will be a different discussion and much more will come to the surface.
29	Service Engineer (2)	Yes, I am also convinced about that. I think there is much more….that people hold back their real opinions and reactions when the manager of Housing is attending. Some of the service engineers look up to that management position.
30	Service Engineer (1)	Yes, and you know that [*points at coordinator*]. You are attending as district coordinator, but I know for sure that you notice that most people are much more open when they are in their own district. They talk more when there is no manager attending. Some are really holding back, I know that for sure!
31	District Coordinator	Yes, I have noticed that also, but I think it is very much a pity.
32	Service Engineer (1)	No, well look, we have asked for opinions after those four sessions …. what are people really thinking about it? Then I hear; yes, I do not think this is very helpful, but I stayed because others also did so.
33	Researcher	Do they tell you what or why they do not find it any good or helpful?
34	Service Engineer (1)	Well yes….yes, there is much that is said; that is not clear or that things are not right. Those kinds of things...
35	District Coordinator	I think that the number of people in one group is also too big. That might also be a reason why some employees do not speak out loud.
36	Service Engineer (1)	Yes, that could be so, but I think the main reason is the fact that some of our managers were also attending, listening and taking part in the discussion.

Appendix F – Case 3: Detailed overview of coding results per utterance of the informal conversation

No. of discourse fragment	Function / Role	Utterances (Percentage scored by 6 coders >>>) (these speech acts are the same as Appendix E)	1) Assertives Abs	%	2) Directives Abs	%	3) Commissives Abs	%	4) Expressives Abs	%	5) Declarations Abs	%	Non-cooperative (1-21) Abs	%	Cooperative (22-29) Abs	%	General (30-44) Abs	%	Meta-communicative (45-64) Abs	%	1) Initiative Abs	%	2) Understanding Abs	%	3) Performance Abs	%	4) Closure Abs	%
1	Service Engineer (1)	I think it would be interesting to sit together regularly, just the service enigineers. Just talking with eachother how things are going. This does not mean we have to make rules and regulations, but I want to hear things; how others are thinking about certain issues, that would be interesting.	0	0	4	80	0	0	1	20	0	0	0	0	2	40	1	20	3	60	5	100	0	0	0	0	0	0
2	Service Engineer (2)	I am missing that at the moment.... I don't know how how that is with you, but we did that at SWS [another housing company before the merger] earlier with all service engineers .... then we sat with the whole group for about one and a half hours or every month with the whole group together. And then we also revealed that all of us worked in a different way, but you can not get everyone on one line, not 20 man. They will always work in a different way.	0	0	0	0	1	20	4	80	0	0	2	40	3	60	1	20	1	20	0	0	4	80	0	0	1	20
3	Service Engineer (1)	When I remember these sessions and the moments I attended them, than I think that many service engineer had a lot of questions but they did not asked anything. The reactions on questions or certain situations are very marginal. I think that the service engineers do not react and that might be typical for this group. When there is no attention for this kind of lack in reactions and participation, than everybody keeps on doing his/her own thing and are all these interactive sessions useless.	4	80	0	0	0	0	1	20	0	0	5	100	1	20	2	40	2	40	2	40	2	40	0	0	1	20
4	Service Engineer (1)	[Researcher: but was there enough time for these answers and questions, to deepen them out completely?] I think that...it was all rushed and it all had to be settled on time, but I think, if you really would have had certain questions that are important for this kind of lack in reactions and discuss the situation. At least these questions could have been written down somewhere to keep in mind. Personally I feel that this is not realized in the sessions.	2	40	0	0	0	0	3	60	0	0	2	40	2	40	1	20	1	20	1	20	4	80	0	0	0	0
5	Service Engineer (1)	When I remember the last session when I attended, and I see that man again...that man who played for tenant....like a kind of actor in a role play. There was absolutely no reaction at all.	2	40	0	0	1	20	2	40	0	0	2	40	1	20	1	20	2	40	0	0	1	20	1	20	3	60
6	Service Engineer (1)	I deliberately kept quiet. I agreed with [mentions name] that we would actually say nothing, but of course, finally we could not do that anymore.	0	0	0	0	0	0	5	100	0	0	0	0	1	20	1	20	3	60	0	0	2	40	1	20	2	40
7	Service Engineer (1)	[Researcher: Is this something new for the people?] Yes, I think that many of them have a certain fear for the situation. They just do not want to show to their colleagues that they actually do not know how to handle the situation. Perhaps they know what to do, but some colleagues might do it differently.	1	20	1	20	0	0	3	60	0	0	0	0	2	40	1	20	3	60	0	0	5	100	0	0	0	0
8	District Coordinator	Ok, but is there a lot of uncertainty amongst the service engineers at this moment? Do they really think that they are not doing the right thing in the right way?	0	0	0	0	0	0	3	60	2	40	1	20	2	40	3	60	0	0	3	60	2	40	0	0	0	0

No. of discourse fragment	Function / Role	Utterances (these speech acts are the same as Appendix E) / Percentage scored by 6 coders >>>	1) Assertives Abs	1) Assertives %	2) Directives Abs	2) Directives %	3) Commissives Abs	3) Commissives %	4) Expressives Abs	4) Expressives %	5) Declarations Abs	5) Declarations %	Non-cooperative (1-21) Abs	Non-cooperative (1-21) %	Cooperative (22-29) Abs	Cooperative (22-29) %	General (30-44) Abs	General (30-44) %	Meta-communicative (45-64) Abs	Meta-communicative (45-64) %	1) Initiative Abs	1) Initiative %	2) Understanding Abs	2) Understanding %	3) Performance Abs	3) Performance %	4) Closure Abs	4) Closure %
9	Service Engineer (1)	Well, a lot has happend for the service engineers. I think, the biggest mistake ever made in our situation, ...but well, I might be alone in that, but the mistake is that they [management] thought that our technical background is not important anymore in our job.	2	40	0	0	0	0	2	40	1	20	4	80	0	0	1	20	1	20	1	20	4	80	0	0	2	40
10	District Coordinator	Yes, but do you remember the reaction of our manager Housing [mentions name]. He also heard this reaction, that a technical background and knowledge should be less important. But in fact he never said that in that way!	2	40	1	20	1	20	1	20	0	0	3	60	0	0	2	40	2	40	0	0	2	40	1	20	2	40
11	Service Engineer (2)	Yes, but when we have to make a text for a vacancy and we ask whether or not the new employee must have technical skills; does it have to be? Than very clearly everybody says no! That is not necessary.	4	80	0	0	0	0	0	0	1	20	2	40	0	0	0	0	3	60	1	20	3	60	0	0	1	20
12	District Coordinator	Yes, without exactly describing how this technical knowledge would look like, it became clear that the service engineers need some technical background. Yes, that is for certain, he needs that.	5	100	0	0	0	0	0	0	0	0	1	20	3	60	1	20	1	20	1	20	3	60	1	20	0	0
13	District Coordinator	What I still remember before these sessions started is the fact that we, district coordinators together with the service engineers, gave advice about the content of the sessions and the people that presented interesting topics. Because people are invited to tell something, and that has to be interesting for the audience, we coordinaters and service engineers, and it is important to take a part in the discussions. Some of us have been doing that all course, but some others really did not say very much, and that is not very usefull. I think there is much more beneath the water level and that this did not came above during the sessions.	0	0	1	20	0	0	4	80	0	0	1	20	2	40	0	0	3	60	1	20	2	40	0	0	2	40
14	Service Engineer (1)	Yes, that is for sure!	0	0	0	0	1	20	3	60	1	20	0	0	4	80	0	0	2	40	0	0	4	80	0	0	1	20
15	District Coordinator	But it is also possible that something is asked in the group. When a new colleague just does not know what it is all about...for example the presentation about 'improvement' [presented by the district managers]...I can imagine that nobody really understood what was said. And when I see and hear what the group of service engineers is asking about that presentation....then I really think that you missed the message.	1	20	1	20	0	0	3	60	0	0	2	40	0	0	1	20	2	40	2	40	2	40	0	0	1	20
16	Service Engineer (1)	Yes, that is what I said. These conversation sessions were really good, nothing against it. But our district coordinators must keep a firm grip on this, that everything must have a follow up. When you do not keep control on this than everybody will go on with his/her job as usual and we have spent hours talking with each other which will be for nothing, it is all useless.	2	40	0	0	1	20	2	40	0	0	2	40	2	40	0	0	3	60	1	20	4	80	0	0	0	0
17	District Coordinator	In some way I agree on that, but I still question why this is only something the coordinators should keep in control?	1	20	2	40	0	0	2	40	0	0	0	0	4	80	4	80	0	0	1	20	4	80	0	0	0	0

No. of discourse fragment	Function / Role	Utterances (these speech acts are the same as Appendix E) — Percentage scored by 6 coders >>>	1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non-cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-54)		1) Initiative		2) Understanding		3) Performance		4) Closure	
			Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
18	Service Engineer (1)	Because it is their role to coordinate everything!	3	60	1	20	0	0	0	0	1	20	2	40	0	0	0	0	3	60	2	40	1	20	2	40	0	0
19	Service Engineer (2)	You [means district coordinator] have regular meetings with other coordinators of the other districts. During this meeting is their never a moment that you talk about the service engineers, their job and what they are doing?	2	40	2	40	0	0	1	20	0	0	0	0	0	0	5	100	0	0	2	40	3	60	0	0	0	0
20	District Coordinator	Yes, of course. Also based on these sessions we talked twice about what we see...what is happening in the group of service engineers? Also when we talked about these 'improvements', what is different in the way service engineers acted before and what they do now. I know that there are thoughts to try to let the service engineers work in a more similar way, of course with respect of their own insights, because you won't get everybody on the same line.	3	60	0	0			1	20	1	20	2	40	0	0	1	20	2	40	0	0	2	40	1	20	2	40
21	District Coordinator	But now very practical, are you really doing things differently than before?	0	0	3	60	0	0	2	40	0	0	1	20	0	0	4	80	0	0	1	20	2	40	1	20	1	20
22	Service Engineer (1)	No, but I have not heard anything new during these training sessions. All the topics discussed until now are not new to me, at least as far as I see it...what I did differently than, let me say it in that way.	2	40	0	0	0	0	3	60	0	0	3	60	1	20	0	0	4	80	0	0	2	40	1	20	2	40
23	Service Engineer (2)	...first I had not that much cost awareness, but that direction is no clear. However, when I will renovate a house against lower cost than I notice that our customer manager is not very pleased...he tells me that he can not ask enough rent this house!	2	40	1	20	0	0	2	40	0	0	2	40	2	40	1	20	3	60	0	0	4	80	0	0	1	20
24	Service Engineer (1)	...but I think that also our customer managers needs to understand why we are working in that way. He must be able to explain that to the tenant. That is something that is not happening very much, I think.	0	0	0	0	0	0	5	100	0	0	3	60	0	0	2	40	1	20	3	60	1	20	0	0	2	20
25	Service Engineer (1)	...we also have houses that are 100 years old. Those houses cannot be improved for a small budget! Leave them empty without tenants is also impossible. So at this moment we are looking for possibilities to renovate these houses completely or even demolish these houses. But these discussions are rather new for me!	2	40	2	40	0	0	1	20	0	0	2	40	0	0	2	40	2	40	1	20	2	40	1	20	1	20
26	District Coordinator	Yes, I do recognize that. I also heard that they said; the service engineers are just doing 'improvement', and they keep on doing that. Than I said, but are they ever told about the high expenses that go with that 'improvements'? And than it seems to be that these cost and expenses are never discussed with the service engineers.	4	80	0	0	0	0	1	20	0	0	1	20	4	80	0	0	1	20	1	20	2	40	1	20	1	20
27	Researcher	Ok, lets look a little bit into the future. When you would like to have a follow up program, how would that look like for you?	0	0	1	20	0	0	0	0	4	80	1	20	0	0	3	60	2	40	3	60	0	0	1	20	1	20

Appendix F – (continued) Case 3: Detailed overview of coding results per utterance of the informal conversation

No. of discourse fragment	Function / Role	Utterances (these speech acts are the same as Appendix E) Percentage scored by 6 coders >>>	1) Assertives Abs	%	2) Directives Abs	%	3) Commissives Abs	%	4) Expressives Abs	%	5) Declarations Abs	%	Non-cooperative (1-21) Abs	%	Cooperative (22-29) Abs	%	General (30-44) Abs	%	Meta-communicative (45-64) Abs	%	1) Initiative Abs	%	2) Understanding Abs	%	3) Performance Abs	%	4) Closure Abs	%
28	Service Engineer (1)	I would like to hear how all service engineers respond when they talked with you....you [the researcher] alone with that group, a strange person, not a coordinator or manager. Than see how everybody reacts. I think there will be a different discussion and much more will come to the surface.	1	20	0	0	0	0	3	60	1	20	1	20	2	40	2	40	2	40	4	80	0	0	1	20	0	0
29	Service Engineer (2)	Yes, I am also convinced on that. I think there is much more....that people hold back their real opinions and reactions when the manager Housing is attending. Some of the service engineers look up against that management position.	2	40	0	0	0	0	3	60	0	0	0	0	3	60	1	20	4	80	0	0	4	80	1	20	0	0
30	Service Engineer (1)	Yes, and you know that [points at coordinator]. You are attending as district coordinator, but I know for sure that you notice that most people are much more open when they are in their own district. They talk more when their is no manager attending. Some are really holding back, I know that for sure!	2	40	1	20	0	0	2	40	0	0	1	20	1	20	0	0	4	80	2	40	2	40	0	0	1	20
31	District Coordinator	Yes, I have noticed that also, but I think it is very pity.	0	0	0	0	1	20	4	80	0	0	0	0	5	100	0	0	2	40	0	0	5	100	0	0	0	0
32	Service Engineer (1)	No, well look, we have asked for opinions after those four sessions ..... what are people really thinking about it? Then I hear, yes, I do not think this is very helpful, but I stayed because others also did so.	4	80	0	0	0	0	1	20	0	0	2	40	0	0	0	0	3	60	1	20	2	40	2	40	4	80
33	Researcher	Do they tell you what or why they do not find it any good or helpful?	1	20	2	40	0	0	0	0	2	40	0	0	0	0	4	80	1	20	3	60	2	40	0	0	0	0
34	Service Engineer (1)	Well yes....yes, there is much that is said; that is not clear or that things are not right. That kind of things....	2	40	0	0	1	20	2	40	0	0	0	0	1	20	0	0	4	80	1	20	2	40	1	20	1	20
35	District Coordinator	I think that the number of people in one group is also too big. That might also be a reason why some employees do not speak out loud.	1	20	0	0	0	0	4	80	0	0	0	0	2	40	2	40	2	40	1	20	2	40	1	20	1	20
36	Service Engineer (1)	Yes, that could be so, but I think the main reason is the fact that some of our managers were also attending, listening and taking part in the discussion.	1	20	0	0	0	0	4	80	0	0	1	20	2	40	0	0	3	60	0	0	3	60	0	0	2	40

Nr. of the utterance	Case1 / Utterances of a regional kick off meeting	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
1	But what if I do not have any Internet connection and they have sent an order to me what will happen than? Will I miss this order?	1					1				1			1		
2	No, if there is a connection later on, than you will still receive this order and all the information is still available.	1				1					1				1	
3	How do you use the different codes in this system? Are these still the same as we are used to?		1		1						1			1		
4	Yes, we use the same codes until now. But they (*the project group*) are also talking about new codes for getting more details. I do not know at this moment what will be the coding for all our maintenance work.		1	1							1			1		
5	Do I also have to work with the different material numbers at this moment?		1		1						1			1		
6	Yes, but these numbers are already in the system available.	1		1								1		1		
7	Okay, but does every engineer know these numbers? Or do we have to work with a manual and look them up? This will take a lot of time.		1	1							1			1		
8	Yes, but you can see these numbers on your Tablet PC. They are there!	1		1						1				1		
9	….Did some of you already take a look with a colleague to see the application and how it works?				1						1			1		
10	I don't think so, at least I have not had any visitors! (*…laughing…*)			1					1					1		
11	Some of our engineers have difficulties with the Tablet PC and the applications. When they only have a shift once in a six-week period then the routine will take very long.	1	1	1					1					1	1	
12	Yes, this might be an extra problem. But we then have to support them and be aware that they will pick up all the new stuff, perhaps a little bit easier. But at the end they also must work with this system.			1							1	1		1	1	
13	I know the direction of this project. They want us to start working from home. If this works well we do not have to come to the office anymore. But I do not think this will work. The way they tell it seems very nice, but I do not think that it will work in that way.		1	1					1					1		
14	I think the project and new way of working will be very good. Of course the older employees might have some difficulties, but I can help them to get along with the system. For you, the younger ones, it won't be a problem, I think.		1	1							1			1		
15	How do you take care that engineers within your region deliver the proper data?				1						1				1	
16	We have said this from the beginning. Already in the training we start to tell the engineers that they were responsible for correct data entry. You have to take care that this will always happen! You have to see that the engineers keep on doing this so they will learn it is a part of their job.				1			1	1						1	
17	How much time did you need to get used to work with the system?	1			1						1				1	

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36   These tables show the detailed coding of the utterances performed and are presented here to illustrate. A detailed overview of the data and the analysis can be asked on request by sending an email to the researcher.

Nr.of the utterance	Utterances of a regional kick off meeting	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
18	That's difficult to say....mmm, we have been testing, after that we got the training and after that we started working in real practice. But it will take some time to learn all the ins and outs of this system. I am now working with it for about two weeks.			1									1		1	
19	How do you think about this change?				1						1				1	
20	First I want to see things working in practice, after that I will believe it. At first it looks rather good.			1							1			1	1	1
21	I think it will take a lot of extra work for me to administrate all this. This could be a blocking issue for me.			1						1					1	1
22	Can you mention more things that will change for the users?		1		1						1				1	
23	Oh, many things….(Project CM: give some examples). There are so many things that will change, system-wise….	1	1	1							1				1	
24	Do we want at the end this validation step to disappear in the whole process?				1						1				1	
25	Yes, but the engineer in the back-office should always take some action and give his approval. But for instance for an engineer of which he knows he is working good this step is just "a mouse click" and then it is validated. For other engineers who are not working that good we still have to validate.			1							1				1	
26	So these are the work orders which are to be done. The engineers can pick them random and freely. This is what I call the freedom within responsibility.	1	1								1		1	1	1	
27	Ok, what can you do when this order keeps in the list? Nobody picks it up and they will not start working on it?						1				1				1	1
28	Yes, than I have to dispatch this order out of the list to someone. But I think this is also something that should be discussed in the team. We have a performance target within our team and we realize this together.			1							1				1	
29	Ok, this was our demonstration. It seems logical and of course we know that this will take some time to learn. But we want to ask you to start looking into the system with a colleague. The application is dealt with in your region.				1						1					1
30	When is the training for our team planned?				1						1			1		
31	Yes, I have the global schedule at this moment. Together with (…mentions name…) we have to look into the detailed planning for training. I come back to that later, alright?				1	1					1			1	1	1
32	Yes, I think we have to do some homework in the next month. We need to make appointments about how we are going to work. This is also necessary for the cooperation within the team. Please start working on this, it's important.				1							1	1			1
33	….Thank you. I would like to know what you think about this way of working at this moment. What is your first impression?				1						1				1	

Appendix G – (continued) Detailed overview of the coding across the three cases with TI and SI

Nr. of the utterance	Utterances of a regional kick off meeting	1. Innovation — Technical	Social	2. Syntactic (Speech acts) — Assertives	Directives	Commissives	Expressives	Declarations	3. Syntax (Negotiation strategy) — Non-cooperative	Cooperative	4. Syntax (Communicative support) — General	Meta-communicative	Initiative	5. Discourse (Conversation phase) — Understanding	Performance	Closure
34	Yes I think we have to start working with it. At this moment I can really see what it has to offer me and what kind of problems I will encounter. At first I think it will also give a lot of extra work.	1	1				1			1			1	1		
35	Yes, but I think that this has to do with getting started on the system. Once you know it, it is possible to do more in the same time. But time will tell us. If things are working out well you should have less work with validation. In the end perhaps absolutely no work anymore....			1							1			1		
36	Yes, but this was something I have heard many times. I think that at least one or two employees are quite busy with this. What will they do when this is not necessary anymore?						1		1					1		
37	....I think we should also take a good look at the way engineers fill in the documents at this moment. When this information is alright then you should not have much rework anymore. So in this way we must educate the engineers in the correct way.				1						1		1		1	
38	.....yes I understand.....			1		1	1				1			1		
	TOTALS >>	7	11	20	14	3	6	0	7	11	19	6	4	30	13	0

Appendix G – (continued) Detailed overview of the coding across the three cases with TI and SI

Nr. of the utterance	Utterances of a diagnostic workshop	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
Case2		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
1	Do not make it to complicated. In my opinion we should be aware of the extra administrative workload for the technicians. If they have to do more work they will have less time to do maintenance.		1	1							1			1		
2	This is something you keep on saying. I think it is your job to show the technicians they are crucial in this project. The aircraft maintenance department has the most employees and they will have to work with the system.	1		1						1			1	1	1	
3	By the way, why is our manager Technical Department not in this workshop? It is important for him to hear this discussion.			1	1		1				1			1		
4	I agree, but he had some other important meetings that were already planned. I think we can also speak for him, you know him all very well.						1			1					1	
5	Should we also ask our Information Technology specialist to join us? I think he might be very helpful in some discussions.	1			1								1	1		
6	No, this workshop is ment to see how the most influencing people; you, think about this change project. We will not go in details about the system.		1						1	1			1			1
7	Well I know also a lot of details about TRAX, so if we come to that point both [PL Overall] and I can give answers.	1				1					1				1	
8	Ok let's start. We all know this change is absolutely necessary. There is no other option. We all know that!						1				1			1		
9	Yes but we also know that there is a group of employees within Aircraft Maintenance that are absolutely not used to work with ICT tools. They are also not used in working with the currant application and always use detailed manuals in their work. This group is about 20 employees and in particular older in age.	1		1					1	1	1				1	
10	Ok, that is only a small group. The TRAX system is of great importance for further development and existance of the Technical Department. There is no discussion about that. With this system we can make a real big step. The investment should secure our continuity.	1		1							1		1			1	
11	We started the implementation of TRAX because the old system will not longer be serviced by the supplier. Using it longer would increase the risk on system failures and would be irresponsible	1		1							1			1		
12	The CEO might ask us the question; what are the savings within the Technical Department now we have implemented TRAX?			1			1				1				1	
13	Well these savings (estimated) are described in the Project Initiation Document (PID). There is a business case with potential savings. I am more concerned about the involvement of the management in general. I try to do this as much as possible.	1	1									1				1
14	We all know the employees that are skeptical about this change project. However there are also employees that see the benefits. We should focus on them.		1			1				1			1			
15	Ok, this might be a good moment to investigate which employees are positive and who are the more negative ones. I suggest we should focus on several clusters within the organization first and than consider people that are positive / negative about the change. We can put these on the flip chart. [the groups starts a short dicussion about the possible clusters]		1		1						1			1		
16	Alright, after this discussion I think we get five clusters; 1) Office, 2) Project, 3) Information Technology, 4) Aircraft Maintenance and 5) MT Technical Department. Do you all agree?			1	1		1				1	1			1	
17	Well I know three employees [mentions names] of which two are really positive, they see changes in the future work procesess. But the other one is very critical. He has a 'not invented by me' mentality and does not believe in the new system because he is not involved. However, their impact is not very big on this project.	1		1							1	1	1		1	

Nr. of the utterance	Utterances of a diagnostic workshop	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
	Case2	Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
18	I have also two employees in my department. Both are skeptical. They first have to see the results and than they will believe it. They take nothing for granted but their impact on this project is also not very big.			1						1	1	1		1		
19	I think there are two employees on the Manpower department that are suspicious about the change. One of them also questions the role of the organization in this project. I think they are neutral about this change an have not really much influence		1	1								1		1		
20	Ok, thanks! Let's take a closer look at different persons in the change project. So this is about you people sitting on this table. *[particpants starts laughing and discussing about there own roles]*					1						1	1		1	1
21	Well, my impact is of course very big! I am positive about this change and I am responsible for timely delivery, with a high quality and user acceptance of the system.			1						1				1		
22	For me it is important that the business will accept the new system. I have some influence on this, however when the system works according the user specifications it will be accepted by the users. I have some impact on that.			1						1				1		
23	We have also selected the super users on their positive attitude. Their influence on, and involvement with the new system is big. But they are all positive and expect great things from TRAX.	1	1	1						1		1		1		
24	What do you think about the project members concerned with Information Technology? Ofcourse they are facilitating in this project but their impact on a succeful system is big. After all they are positive about the change.	1				1					1		1			
25	Let's take a closer look at the Information Technology Department. What do they think about this change? What is your impression?					1					1		1			
26	I think both the Manager's Operations ICT and Information Management are positive. Manager Operations is concerend about 'keeping the system up and running'. The manager Information Management will be responsible for further development of TRAX. She has to organize the IT support.	1		1								1		1		
27	I think it is well known that some of my employees are very negative about everything. This has to do with the reorganization last year. Some are very clear about their situation: 'first you *[Mgr AM]* reorganize my job and than you ask me to do more administration'. Another states 'you have messed up my last three years here'. And of course we have one employee who is always against everthing. The impact of these employees on this project is not that big. However, we have to keep this in our mind during the roll out phase.		1	1						1				1		
28	An how about the team managers within your department?					1					1		1			
29	Well I do not know. Of course their impact is big on this project. They have to support the project and talk positive about it in their team. But I do not know what their interest might be in this project. They are positive about the change.		1	1			1				1			1		
30	And we have a lot of technicians that talk the same story of others; 'first we have to see and then we believe in it'. Other employees think METALS *[the old system]* is very bad. This new system can not be that bad. However they are skeptical about the user interface and the effort a user has to afford by using the new system in their work.	1		1						1		1	1		1		
31	Ok, but we have also very positive employees. They think every change is fun and most of the young employees are very open minded to TRAX. These employees are also members of the Super User group.		1	1										1	1	
32	Well we have talked a lot about other employees. Now I want to take a closer look on the people in the Management Team of the Maintenace Department. So, it is about your role in this project.					1						1				1

Nr. of the utterance	Utterances of a diagnostic workshop	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)			5. Discourse (Conversation phase)		
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
33	I think TRAX will give us more and better management information. With this we can organize better maintenance in a controlled way. I am positive but also a litlle bit skeptical. I do not want that my people have to do more administration. That might be a problem with this system.	1					1				1			1		
34	Well I am really very positive about TRAX. I am a senior user and member of the project baord. My interest in a succeful implementation is very big. I think it is about time we will have some stability in the organization. But I will tell everybody the necessity of this system for our Technical Department	1		1						1					1	
35	I agree with my collegae. I also tell everybody about the necessity of TRAX. I am positive despite the implementation of the system will have some impact within my department.	1		1						1				1		
36	Yes, unfortunately our manager Technical Department is not available. He of course is our principal. His goal is to achieve an optimal maintenance process and higher efficiency. However, he does not speak 'the language'. He is just in and is bording on a fast train. I think his impact is big and he is positive about TRAX			1					1		1			1		
	TOTALS >>	14	9	24	8	2	7	2	6	13	16	14	11	19	6	4

Nr. of the utterance	Case2 — Utterances of an informal conversation after the formal diagnostic workshop	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
1a	Well after this formal meeting I think it is good to tell you *[the consultants]* a little bit more about the history, just before this project started.							1				1	1			
2a	In April 2008 a reorganization started within the Aircraft Maintenance Department. The maintenance teams were isolated teams and it was difficult to get insight on how they were working. Also the performance was quite different per team.			1								1	1			
3a	Sometimes we sheduled maintance at different hours just because we knew that a specific team was on shift. We knew they would not deliver a good job.			1					1			1		1		
4a	Yes, and the manager of the maintanance department agreed on this situation. He found there was no need to change this.			1			1					1		1		
5a	OK, I understand. Did he want to keep the situation stable?				1						1		1			
6a	Yes, but the manager Technical Department came in and he made a plan to change this situation. His goal was to separate management and operational tasks. He wanted more 'control' and transparency in the maintenance procesess. He also wanted to break up the strict social structure in the teams.		1	1						1	1			1		
7a	For our manager Aircraft Maintanance this was a very bad project. It resulted in very negative reactions of his employees on the plan. Also the relationship between the Manager Technical Department and Manager Aircraft Maintenance got worse. But also the relationship between some of the employees and the Manager Aircraft Maintance got very bad.		1	1					1		1	1		1		
8a	These employees saw their manager as the 'bad messenger' who ruined the last years of their carreers			1								1		1		
9a	After this reorganization the old team leaders are replaced by three new and younger teamleaders. A new role of operational coordinator was created for these employees, but this is seen as a degrade.		1	1				1	1			1		1		
10a	Those degraded team leaders are very angry on 'their Manager Aircraft Maintenance'. They think he is responsible for all of this			1								1		1		
11a	Well, now I can understand the difficult relation between the Manager Technical Department and the Manager Aircraft Maintenance.			1			1	1		1				1		
12a	Well, this is just informal information but I think it is good to know this.			1								1				1
	TOTALS >>	0	3	10	1	0	2	3	3	2	3	9	3	8	0	1

Nr. of the utterance	Utterances of an informal conversation (Case3)	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
1	I think it would be interesting to sit together regularly, just the service enigineers. Just talking with eachother how things are going. This does not mean we have to make rules and regulations, but I want to hear things; how others are thinking about certain issues, that would be interesting.	1			1							1	1			
2	I am missing that at the moment…. I don't know how that is with you, but we did that at SWS [*another housing company before the merger*] earlier with all service engineers …. then we sat with the whole group for about one and a half hours or every month with the whole group together. And then we also revealed that all of us worked in a different way, but you can not get everyone on one line, not 20 man. They will always work in a different way.	1					1			1				1		
3	When I remember these sessions and the moments I attended them, than I think that many service engineer had a lot of questions but they did not asked anything. The reactions on questions or certain situations are very marginal. I think that the service engineers do not react and that might be typical for this group. When there is no attention for this kind of lack in reactions and participation, than everybody keeps on doing his/her own thing and are all these interactive sessions useless.			1						1				1	1	
4	[*Researcher: but was there enough time for these answers and questions, to deepen them out completely?*] I think that…it was all rushed and it all had to be settled on time, but I think, if you really would have had certain questions that are important it is possible to answer them and discuss the situation. At least these questions could have been written down somewhere to keep in mind. Personally I feel that this is not realized in the sessions.	1					1		1	1					1	
5	When I remeber the last session when I attended, and I see that man again…that man who played for tenant….like a kind of actor in a role play. There was absolutely no reaction at all.	1	1				1			1		1				1
6	I deliberately kept quiet. I agreed with [*mentions name*] that we would actually say nothing, but of course, finally we could not do that anymore.						1					1		1		1
7	[*Researcher: Is this something new for the people?*] Yes, I think that many of them have a certain fear for the situation. They just do not want to show to their colleagues that they actually do not know how to handle the situation. Perhaps they know what to do, but some colleagues might do it differently.	1					1					1		1		
8	Ok, but is there a lot of uncertainty amongst the service engineers at this moment? Do they really think that they are not doing the right thing in the right way?						1				1			1		
9	Well, a lot has happend for the service engineers. I think, the biggest mistake ever made in our situation, …but well, I might be alone in that, but the mistake is that they [*management*] thought that our technical background is not important anymore in our job.	1	1				1			1					1	
10	Yes, but do you remember the reaction of our manager Housing [*mentions name*]. He also heard this reaction, that a technical background and knowledge should be less important. But in fact he never said it in that way!			1						1					1	1
11	Yes, but when we have to make a text for a vacancy and we ask whether or not the new employee must have technical skills; does it have to be? Than very clearly everybody says no! That is not necessary.			1								1		1		
12	Yes, without exactly describing how this technical knowledge would look like, it became clear that the service engineers need some technical background. Yes, that is for certain, he needs that.	1		1						1					1	

Appendix G – (continued) Detailed overview of the coding across the three cases with TI and SI

Nr. of the utterance	Utterances of an informal conversation	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
	Case3	Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
13	What I still remember before these sessions started is the fact that we, district coordinators together with the service engineers, gave advice about the content of the sessions and the people that presented interessting topics. Because people are invited to tell something, and that has to be interesting for the audience, we coordinaters and service engineers, and it is important to take a part in the discussions. Some of us have been doing that af course, but some others really did not say very much, and that is not very usefull. I think there is much more beneath the water level and that this did not came above during the sessions.	1					1				1			1		1
14	Yes, that is for sure!						1			1				1		
15	But it is also possible that something is asked in the group. When a new colleague just does not know what it is all about…for example the presentation about 'improvement' [*presented by the district managers*]…I can imagine that nobody really understood what was said. And when I see and hear what the group of service engineers is asking about that presentation….then I really think that you missed the message.						1			1	1		1	1		
16	Yes, that is what I said. These conversation sessions were really good, nothing against it. But our district coordinators must keep a firm grip on this, that everything must have a follow up. When you do not keep control on this than everybody will go on with his/her job as usual and we have spent hours talking with each other which will be for nothing, it is all useless.		1				1				1			1		
17	In some way I agree on that, but I still question why this is only something the coordinators should keep in control?				1		1			1	1			1		
18	Because it is their role to coordinate everything!		1								1	1			1	
19	You [*means district coordinator*] have regular meetings with other coordinators of the other districts. During this meeting is their never a moment that you talk about the service engineers, their job and what they are doing?		1	1							1			1		
20	Yes, of course. Also based on these sessions we talked twice about what we see...what is happening in the group of service engineers? Also when we talked about these 'improvements', what is different in the way service engineers acted before and what they do now. I know that there are thoughts to try to let the service engineers work in a more similar way, of course with respect of their own insights, because you won't get everybody on the same line.	1	1							1	1			1		1
21	But now very practical, are you really doing things differently than before?				1						1			1		
22	No, but I have not heard anything new during these training sessions. All the topics discussed until now are not new to me, at least as far as I see it...what I did differently than, let me say it in that way.						1				1			1		1
23	…first I had not that much cost awareness, but that direction is no clear. However, when I will renovate a house against lower cost than I notice that our customer manager is not very pleased…he tells me that he can not ask enough rent this house!			1			1				1			1		
24	…but I think that also our customer managers needs to understand why we are working in that way. He must be able to explain that to the tenant. That is something that is not happening very much, I think.	1					1		1				1			
25	…we also have houses that are 100 years old. Those houses cannot be improved for a small budget! Leave them empty without tenants is also impossible. So at this moment we are looking for possibilities to renovate these houses completely or even demolish these houses. But these discussions are rather new for me!			1	1					1	1	1		1		

Nr. of the utterance	Utterances of an informal conversation	1. Innovation		2. Syntactic (Speech acts)					3. Syntax (Negotiation strategy)		4. Syntax (Communicative support)		5. Discourse (Conversation phase)			
		Technical	Social	Assertives	Directives	Commissives	Expressives	Declarations	Non-cooperative	Cooperative	General	Meta-communicative	Initiative	Understanding	Performance	Closure
26	Yes, I do recognize that. I also heard that they said; the service engineers are just doing 'improvement', and they keep on doing that. Than I said, but are they ever told about the high expenses that go with that 'improvements'? And than it seems to be that these cost and expenses are never discussed with the service engineers.			1						1				1	1	
27	Ok, lets look a little bit into the future. When you would like to have a follow up program, how would that look like for you?						1				1		1			
28	I would like to hear how all service engineers respond when they talked with you…you [the researcher] alone with that group, a strange person, not a coordinator or manager. Than see how everybody reacts. I think there will be a different discussion and much more will come to the surface.						1			1	1	1	1			
29	Yes, I am also convinced on that. I think there is much more….that people hold back their real opinions and reactions when the manager Housing is attending. Some of the service engineers look up against that management position.						1				1			1		
30	Yes, and you know that [points at coordinator]. You are attending as district coordinator, but I know for sure that you notice that most people are much more open when they are in their own district. They talk more when their is no manager attending. Some are really holding back, I know that for sure!			1			1				1	1	1			
31	Yes, I have noticed that also, but I think it is very pity.						1			1				1		
32	No, well look, we have asked for opinions after those four sessions …. what are people really thinking about it? Then I hear; yes, I do not think this is very helpful, but I stayed because others also did so.			1							1					1
33	Do they tell you what or why they do not find it any good or helpful?				1			1			1		1			
34	Well yes….yes, there is much that is said; that is not clear or that things are not right. That kind of things…			1			1				1		1			
35	I think that the number of people in one group is also too big. That might also be a reason why some employees do not speak out loud.						1			1	1	1	1			
36	Yes, that could be so, but I think the main reason is the fact that some of our managers were also attending, listening and taking part in the discussion.						1				1		1			
	TOTALS >>	1	9	16	6	0	22	2	9	9	9	20	10	27	2	7

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About the author

This study should be placed within my personal development as a practitioner over de last 25 years. The researcher and the researched are two intertwined elements that are hard to divide and as in real life we observe things but are also part of it. How is it possible to not be a part of it when you observe? After working for 25 years as a practitioner it is difficult to be completely objective and 'empty headed' (Dey, 1993) and it is always interesting to know the background of the researcher, because the practical experience certainly formed the way I observe the world. The personal experience and educational background also cultivated my professional culture, and when understood, it might be easier for the readers to place this study in that context.

My theoretical knowledge was already shaped in childhood at the Middle Technical School (MTS) developing in fact my own professional culture as an mechanical engineer. After finishing that school I joined the Royal Netherlands Air Force (RNAF) in 1985 being educated as aircraft engineer for the maintenance of military aircraft (F-16) and engines (Pratt & Whitney). After a working experience of two years on the shop floor I was entitled to become an Officer and followed an education at the Higher Technical School (HTS) to become a Controller. At that time (1990) the Controller was at the heart of different organizational change programs, including the implementation of Activity Based Costing, Business Administration, Total Quality Management, Business Process Redesign, and implementing Information and Communication Technology systems at the airbase.

With a technical background and hardly any experience with change management I worked on a variety of change programs and experienced the difficulties during conversations with other professionals from Logistics, Human Resources and Operations Management. In 1996 I started a part time study at the University of Nijmegen specializing in Organization and Analysis of Change. This socio-technical (see De Sitter, 1981, 1986 and De Sitter, et. al., 1994) perspective gave me completely different theoretical insights on the social aspects of organizational and human behavior in addition to my technical background. In this period my initial idea about change as a strictly planned (i.e., military operation) project started to shift to a more integral perspective on change in which an organization would not change if the attention was only on parts (i.e., finance, production, logistics) of the organization. However, I still believed that the possibility to 'design' a change process would be a good manner to approach change.

In 1998 the Royal Netherlands Air Force (RNAF) introduced plans to develop an internal consultancy department at the Head Quarters (HQ) in The Hague within the Financial Section. These consultancy functions had to be fulfilled by officers ranked Lieutenant-Colonel. For myself, at that moment being a Captain, this internal consultancy role was out of scope because I first had to fulfill a position at the HQ for at least three years on a Strategic Planning Department with hardly no chance to be involved in change projects.

Therefore I changed my military career in 1999 and started working as a consultant for Pentascope Consultancy. This was my first step into the commercial business world and my expectations were high. In my new role as consultant I got involved in organizational change programs

including Information Technology, Finance, Purchasing and process improvement (BPR). After some years I mainly worked in multi-functional project teams, together with engineers, IT specialist, HR consultants and internal change managers. These teams had to realize the goals of the organizational wide change projects. Most change programs were taking place in the same organization although there was sometimes a geographical spread over the Netherlands (e.g., in regions) and in other projects the change programs involved different companies, both spread over Europe and with multi-functional (virtual) project teams. The complexity of these kind of projects is great in terms of geographical spread and the collaboration between different professions and (national/international) cultures. In those 12 years as a consultant many change programs passed by and every time it was a challenge to get everybody on the same information level, keeping the same pace within conversations, and making the interactions productive.

In this period my perspective on how change management works gradually took a more interactional perspective. It was still necessary to approach change in a planned manner, mostly because the client requested certain deadlines within budget. Nevertheless, my focus was on the interaction processes and I considered myself as a partner facilitating and bridging professional differences. I saw my facilitating role as a glue constantly organizing the interaction between participants, stimulating conversations with each other and trying to reach some level of mutual understanding. In that time I often noticed that employees did communicate but hardly were listening or even questioning their own assumptions about the situation. I became interested in team learning and used ideas from psychotherapy in order to focus on emerging dialogues in the group sessions.

At the same time Pentascope developed a strategic vision on organizing called *'schitterend organiseren'* in which the subjective human factor of organizing would be just as important as the attention for objective results and shareholder value. This process of thinking, talking with colleagues, and my practical experience again influenced my perspective on how to 'manage change' or even the idea that change might not be manageable at all (Homan, 2005). The vision on organizing developed by Pentascope was strongly influenced by the work of Graves (2002, 2005), Beck and Cowan (1996), and Wilber (1996) on (Integral) Spiral Dynamics and the work of Homan (2005) about organization dynamics. The intellectual challenge to develop a new vision on organizing, and in line with that vision, also develop a financially sound business proposition that would sell was a tremendous personal experience which finally resulted in the start of this PhD in the autumn of 2008.

Nearly two years later the economic slowdown encouraged me to think about possible other work positions in which both my work experience and a 'PhD project half finished' would be interesting enough to get a job. After some networking efforts I started in January 2011 as a teacher at Fontys University of Applied Science, lecturing in change management and organization theories. Often it is not a good advice to change jobs while pursuing a PhD, but in my situation it was a perfect match. As a teacher I could transfer my work experience and theoretical knowledge to young adults studying for their Bachelor of Engineering in Small and Medium Enterprises (SME). From the beginning it was clear that working on a PhD is far more accepted in the educational sector instead of in a commercial business environment. Nevertheless, it still felt as two jobs orienting on the new tasks and at the same time continue with my research. The greatest challenge in the first half year was to attune to the students, their way of thinking and their attitude to work and study. After nearly three years I must say it was the good moment in time and I do not regret the switch. With this in mind it is possible for the reader to understand 'where I come from', not empty headed but with an open mind.

This doctoral thesis describes three case studies of service engineers participating in organizational change, interacting with managers and consultants. The study investigates the role of differences in professional discourse and culture when these three professional groups interact in organizational change, and how this affects the change result. We bring together two scientific fields, first change management and second, linguistics. The intersection represents the overlapping field of professional discourse and culture. The research design was an explorative multiple case study using qualitative linguistic analyses. The study found that successful organizational change is the result of interaction between professional culture, the organizational culture and the organization/change context. The differences between the professional cultures and discourses can hamper the change process. The practical contribution of this study might be the increased awareness among professionals about their own professional, and often implicit, assumptions. Managers, consultants and service engineers have to be aware of the group dynamics and the specific role of their own typical professional discourse and culture in a change project setting.

Jos Pieterse (1961) is a lecturer in change management and business management at Fontys University of Applied Sciences. Before this he was a senior consultant facilitating change projects in industrial organizations. He started his carreer in 1983 as an aircraft maintenance engineer for the Royal Netherlands Airforce.